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Final Report

Omega Chemical Corporation
Whittier, California

TDD: 09-96-0015
START Contract #: 68-W6-0010

Prepared By:

Ecology and Environment, Inc.

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1.0 INTRODUCTION

This report describes events initiated by the United States Environmental Protection Agency (EPA) to mitigate environmental and physical hazards imposed by hazardous materials and wastes stored at the Omega Chemical Corporation, also known as Omega Recovery Services (Omega). EPA's Superfund Technical Assessment and Response Team (START), formerly the Technical Assistance Team (TAT), conducted oversight activities on behalf of the EPA during the mitigation activities at Omega.

Omega is located on adjacent parcels of land at 12504 and 12512 East Whittier Boulevard in the city of Whittier, Los Angeles County, California (Figure 1). The Omega property is square in shape, approximately 200 feet on a side, covering approximately 40,000 square feet. There are two structures on the property; an office building located on the eastern corner of the property (12512 address), and an adjacent warehouse with attached front office to the west (12504 address) (Figure 2). The area of the city of Whittier in which the Omega property is located is used for residential, industrial, and commercial purposes. Businesses located immediately adjacent to the Omega property include a roller skating rink, an asphalt paving company, and, until the summer of 1996, an air conditioning service company. Private residences are located across Whittier Boulevard to the northeast, and across Putnam Drive to the southwest of the Omega property. There are two hospitals located within one-half mile of the Omega property.

In January 1995, the California Department of Toxic Substances Control (DTSC) requested assistance from the EPA regarding Omega. DTSC was concerned about thousands of drums labeled as hazardous waste, in poor condition and often leaking, on the Omega property. Despite efforts to cause Omega to rectify the problem, the DTSC had been unable to persuade Omega to safely remove the drums.

On May 9, 1995, the EPA issued Administrative Order No. 95-15 to Omega and its owner, Mr. Dennis O'Meara, requiring that Omega conduct a proper characterization and removal of all hazardous substances and contaminated equipment, structures, and debris from the Omega site; and conduct surface and subsurface soil sampling, as well as groundwater sampling in order to determine the nature and extent of contamination caused by conditions at the Omega site.

This report describes the events resulting from EPA Administrative Order No. 95-15.

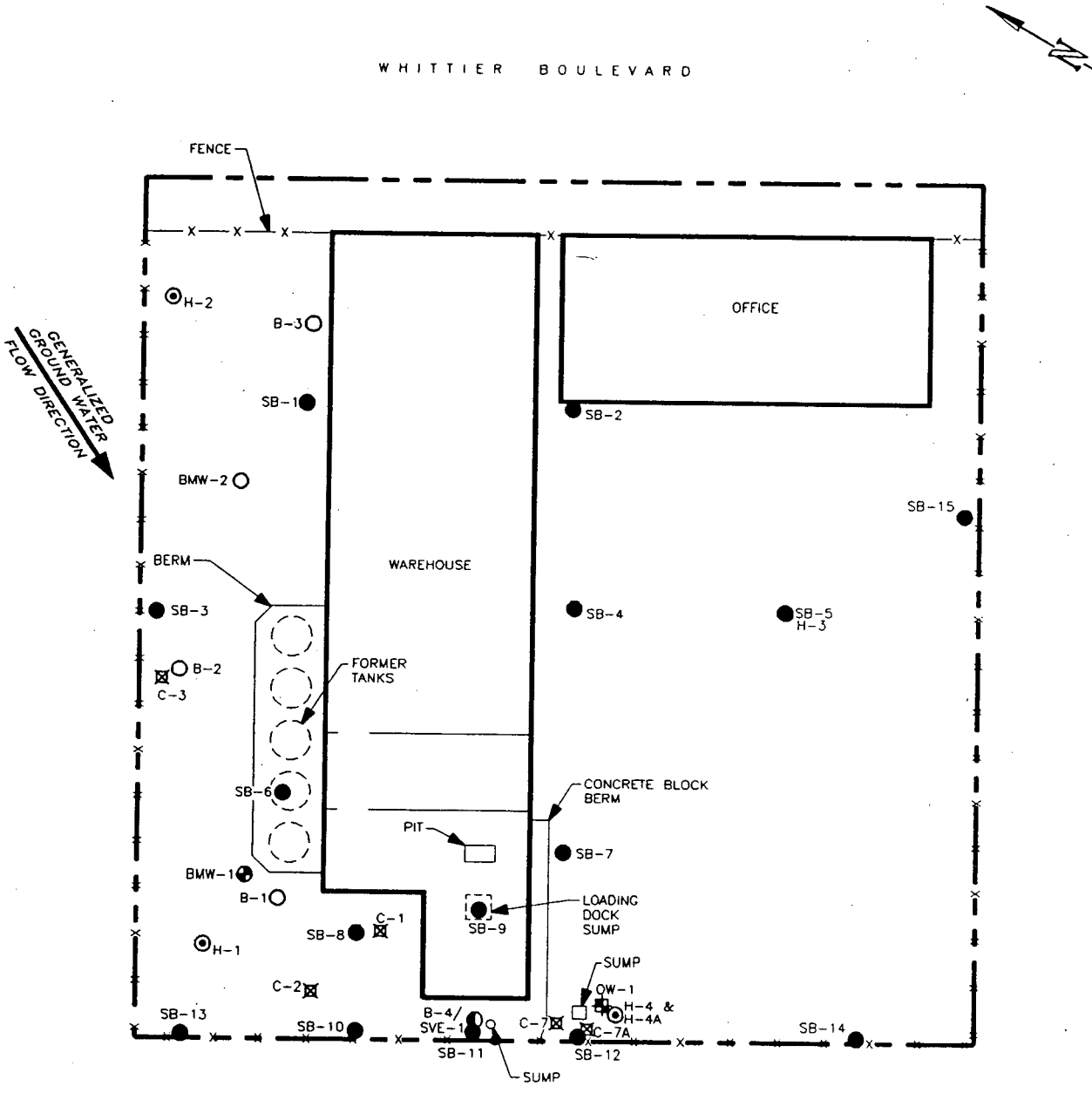
2.0 BACKGROUND

Omega began operating at its 12504 East Whittier Boulevard address in 1976, when it bought out Bachelor Chemical Processing, a business similar to Omega's, in which Mr. O'Meara was also involved. Prior to Bachelor Chemical Processing, during the period 1966-1971, the property was used for an ambulance conversion operation. The property, at that time, may have been owned by Fred R. Rippey, who purchased it in 1963. Prior to 1963, a company called Sierra Bullets was located on the subject property. The nature of the Sierra Bullets business is unknown, but the business reportedly stored kerosene in an underground storage tank which was removed in 1987. Property use at the 12504 address from 1963-1966 is unknown. Omega acquired the 12512 East Washington Boulevard property some time after May, 1989. The Omega facility's grounds outside the warehouse were unpaved until 1989.

Omega operated as a hazardous waste treatment and storage facility at the 12504 address from 1976 to at least 1991. An Interim Status Document (ISD) was issued to Omega by the California Department of Health Services (DOHS) in October 1981 for operation as a hazardous waste treatment and storage facility. At that time, DOHS had state-delegated authority for the issuance of ISDs under the Resource Conservation and Recovery Act (RCRA). During the period 1981-1989, DOHS conducted several ISD

Figure 1
Location Map
Omega Chemical Corporation
Whittier, California

399-A\4020\003\09/30/96



0 40 80 FEET

APPROXIMATE SCALE

EXPLANATION

B-2 ○	ENSR SOIL BORING
BMW-1 ◐	FORMER ENSR GROUNDWATER MONITORING WELL
H-4 ◎	CPT LOCATION (ENGLAND & HARGIS, 1996)
C-7 ⊠	OTHER SOIL SAMPLING LOCATION (ENGLAND & HARGIS, 1996)
B-4/ SVE-1 ◐	SOIL BORING/VAPOR EXTRACTION TEST WELL
OW-1 ⊕	GROUNDWATER MONITORING WELL
SB-15 ●	SHALLOW SOIL SAMPLING LOCATION

NOTE:
LOCATIONS APPROXIMATE.

Figure 2

Omega Chemical Corporation Site Plan and On-Site Sampling and Well Locations

Source: England & Associates, Hargis+Associates

inspections, and cited Omega for safety violations which included the improper storage and labeling of drums. Due to chronic non-compliance with Interim Status standards, the Superior Court for the County of Los Angeles ordered Omega in April 1991 to cease operation, remove all hazardous wastes, and close the facility.

Omega conducted solvent recovery using on-site fractionating and distillation processes, hazardous waste fuels blending under the RCRA Boiler and Industrial Furnaces program, and operated as a storage and transfer facility for other hazardous waste classifications. The reclamation of spent oxygenated and chlorinated solvents, chlorofluorocarbon refrigerants, and paint waste solvent recovery constituted the majority of Omega's business.

In April and May, 1985, LeRoy Crandall and Associates conducted an investigation of subsurface soils beneath a tank farm which was located on the southwest corner of the 12504 East Washington Boulevard property and apparently used by Omega for the storage of chemicals (Appendix A). The work was conducted at Omega's request, and apparently as a result of a Los Angeles County Department of Health Services (DHS) Notice of Violation No. 248888, issue date April 5, 1985. The notice required the proper removal of contaminated asphalt inside the tank farm and soils in the area of the tank farm, and the installation of an impervious surface "to protect soil and groundwater from contamination." LeRoy Crandall and Associates conducted an investigation which entailed hand augering down to six feet in four locations in and adjacent to the tank farm, with samples collected near the top, in the center, and at the bottom of each boring. The samples were sent for analysis to Analytical Research Laboratories of Monrovia, California. It is not known whether this laboratory was certified by the State of California. The samples were analyzed for four chlorinated hydrocarbons by EPA Method 8120. Only the two borings from inside the tank farm were found to be contaminated with 1,1,1-trichloroethane, methylene chloride, trichloroethylene, and/or tetrachloroethylene. Why a broader spectrum of analytes was not investigated is unknown. As a result of the findings from the sampling of the four borings, the most contaminated boring was extended to 8.5 feet bgs and sampled, and one additional boring was augered and sampled. The last boring's one-foot depth sample showed significant contamination from all four analytes, up to 2,000 parts per million (ppm) for tetrachloroethylene. Contamination in this boring decreased with depth. The LeRoy Crandall and Associates report concluded that the contamination found was due to accidental spillage of chemicals, and that the vertical contamination of subsurface soils was of a "limited extent." The report did not indicate that any soil removal was conducted or impervious surface installed, as the DHS had required.

In August 1987, Leighton and Associates, Incorporated conducted underground tank removal oversight and subsequent soil sampling beneath the tank, which was removed from behind the warehouse at the 12504 property (Appendix B). The investigation was apparently conducted on behalf of the Fred R. Rippey Trust. Leighton and Associates observed the removal of the 500-gallon tank, and collected samples from beneath the tank and from the excavated soils. The samples were analyzed by a California-certified laboratory for purgeable halogenated volatile organics (EPA Method 8010), petroleum hydrocarbons (modified EPA Method 8015), and volatile organic compounds by EPA Method 8240. The analytical results indicated that the soil samples were contaminated with chlorinated and non-chlorinated hydrocarbons, and the Leighton and Associates report indicated that the contamination appeared to increase with depth. No mention was made in the report regarding any further excavation of contaminated soils beneath the tank, or any backfilling operations.

In January 1988, ERT, Incorporated conducted a soil gas survey at the warehouse property. The impetus for performing the study is unknown, as is the party funding the study. The soil gas survey encompassed 18 locations, and used a field analytical instrument to roughly determine "hydrocarbon vapor" concentrations which were not analyte-specific. The ERT report (Appendix C) did not specify the depths at which the soil gas samples were collected. The ERT report concluded that "significant levels of hydrocarbon vapors exist in soils beneath the site."

In March and June of 1988, ENSR Consulting and Engineering, formerly ERT, conducted additional subsurface investigation activities at Omega's warehouse property (Appendix D). The investigation was conducted for Thompson & Nelson of Whittier, California. The relation of Thompson & Nelson to Omega is unknown. The investigation entailed the collection of subsurface soil and groundwater samples to further delineate the results of the ERT soil gas study. ENSR drilled five soil borings on the warehouse property, and installed one groundwater well. Samples were collected from the soil borings at five-foot intervals, and the depths of the borings varied from 20.5 feet below ground surface (bgs) to 110 feet bgs. ENSR's soil boring BMW-1, with a 110-foot depth, was converted into the groundwater well. Soil and groundwater samples were analyzed by a California-certified laboratory for volatile organic compounds by EPA Method 8240 and the equivalent EPA Method 624 (for water samples). The results of the ENSR investigation indicated that significant amounts of methylene chloride, 1,1,1-trichloroethane, trichloroethylene, tetrachloroethylene, trichlorofluoromethane, 1,1-dichloroethylene, 1,1,2-trichloro-1,2,2-trifluoroethane, and toluene were found in the soil samples; and, with the exception of toluene, in the water samples as well. The ENSR study concluded that chlorinated hydrocarbons were present beneath the site, and that the contamination found in the soil and water samples was related. The report also concluded that there did not appear to be any imminent danger to life or health due to the contamination found.

In May 1989, Ecology and Environment, Incorporated (E&E) conducted a Preliminary Assessment regarding Omega at the request of the EPA (Appendix E). The assessment entailed investigations into the history of the site, the hazardous substances used at the site, and environmental factors at the site to determine the environmental risk to human health and the environment. The information obtained was used to determine whether the Omega site was appropriate for further investigation and potential placement on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priorities List (NPL). The Preliminary Assessment concluded that there was sufficient evidence to potentially include Omega on the NPL, and recommended further investigation.

By the date of the EPA Preliminary Assessment, the open space to the west of the warehouse was still unpaved, and was mainly covered with drums of hazardous waste on pallets, stacked three pallets high. In addition, the 12512 property to the east of the warehouse, which was paved with asphalt or cement, was also covered with pallets of drums of hazardous waste, also stacked three high. Based on photographs taken during the Preliminary Assessment, many of the drums appear to have been in poor condition.

In August 1993, the TAT inspected Omega at EPA's request and at DTSC's behest. By this date, approximately 2,900 drums in a deteriorating condition were observed at the site. TAT determined that, while there was insufficient cause for an EPA emergency removal at that time, the DTSC should continue to conduct oversight and inspections at Omega (Appendix F).

By January 1995, DTSC was inspecting Omega on a weekly basis, and continually finding leaking drums which DTSC would direct Omega to overpack. Due to Omega's continued non-compliance with DTSC requirements to mitigate the problem of the many leaking drums of hazardous waste on the property, DTSC again enlisted assistance from the EPA. At EPA On-Scene Coordinator R. Martyn's request, TAT met with DTSC personnel, and, on January 20, 1995, TAT inspected the site. TAT observed that many of the drums were in poor condition, and observed that at least three drums were leaking. TAT also noted that all of the RCRA Marks on drums that TAT observed had either the hazardous waste code D001 or F002. As a result of TAT's inspection of Omega, on February 1, 1995, OSC Martyn issued a Notice of Federal Interest to Omega's owner, Mr. O'Meara, and stated that if Omega did not meet deadlines specified by DTSC for interim site mitigation, the EPA would take over the site cleanup. (TAT Site Assessment Report, Appendix G).

As a result of the Notice of Federal Interest and DTSC's requirements, Mr. O'Meara contracted IT

Corporation to inspect the site on a daily basis, and overpack any leaking drums found. TAT was enlisted to provide oversight of the IT Corporation activities. IT Corporation site inspections and drum overpacking operations began on February 9, 1995 and continued through June 26, 1995. In that period, 86 leaking drums were found, their contents hazard categorized, and the drums overpacked. In many cases, the drums' contents were found to bear no relation to the EPA hazardous waste codes marked on the outside of the drums. (TAT report of site monitoring activities, Appendix H).

On May 9, 1995, EPA issued CERCLA Administrative Order No. 95-15 (the Order) to Mr. O'Meara and to generators of hazardous waste which had shipped major quantities of material to Omega (the Respondents). Omega did not comply with the Order, and the Respondents worked together among themselves to deal with the issue. By late June 1995, the Respondents had adequately prepared plans to respond to the initial phase of mitigative activities required by the Order, i.e., to conduct a proper characterization and removal of all hazardous substances and contaminated equipment, structures, and debris from the Omega site.

Table 1 summarizes the major events in the Omega site's environmental investigation history.

Table 1 Major Events in Omega Environmental Investigation History	
October 1981	Omega receives Interim Status Document for operation as a hazardous waste treatment and storage facility
June 1985	Subsurface survey completed, tank farm on southwest corner of Omega property (Appendix A)
August 1987	500-gallon underground storage tank removed from behind Omega warehouse (Appendix B)
January 1988	Soil gas survey conducted, indicating unspecified subsurface petroleum hydrocarbon contamination (Appendix C)
June 1988	Soil borings drilled and one monitoring well installed, which indicate chlorinated hydrocarbon contamination of the subsurface soils and groundwater (Appendix D)
May 1989	EPA Preliminary Assessment conducted, recommending further action (Appendix E)
August 1993	EPA Technical Assistance Team inspects site, recommends continued DTSC oversight (Appendix F)
1993-1995	DTSC site inspections and Omega overpacking of DTSC-specified leaking drums
February 1995	EPA issues Notice of Federal Interest to Omega's owner, Mr. O'Meara
February-June 1995	Omega's environmental contractor, IT Corporation, conducts daily site inspections with TAT oversight, and overpacks 86 leaking drums)
May 1995	EPA issues CERCLA Order No. 95-15 to Mr. O'Meara and major contributing generators (Appendix I)
May-June 1995	CERCLA Order 95-15 Respondents prepare work plans for Order implementation
June 27-September 14, 1995	CERCLA Order Phase I removal activities conducted by PRP group. All hazardous materials and wastes removed from the Omega for proper disposal
November 1996-March 1997	CERCLA Order Phase II investigative activities conducted by PRP group. Soil gas sampling, soil boring sampling, on-site well installation, test vapor extraction well, and CPT/hydropunch soil/water sampling conducted on Omega property. CPT/hydropunch soil/water sampling conducted offsite.

3.0 IMPLEMENTATION OF CERCLA ORDER 95-15

EPA's CERCLA Order No. 95-15, Paragraph 21, required that the Respondents:

"(a) Immediately provide security and restrict access to the site and prevent any materials, equipment or any other item from being removed from the Site without prior EPA approval.

(b) Provide security during removal operations.

(c) Sample and characterize all drums, containers, and hazardous materials.

(d) Perform air monitoring and sampling in accordance with OSHA requirements during all phases of the removal action, especially when there is a potential for airborne releases of toxic air contaminants. Operational controls such as dust suppression will be used to abate fugitive dust emissions.

(e) Remove or stockpile non-hazardous vehicles, equipment, and debris to provide adequate space for response operations.

(f) Prepare all hazardous substances for proper transportation for disposal, or where feasible, alternative treatment or reuse/recycle options. The above may include bulking of compatible waste streams, direct shipment of materials appropriate for reuse, re-containerization of materials into DOT specification containers, lab packing smaller containers, solidification of liquid wastes, and neutralization or other on-site treatment of wastes.

(g) Remove grossly contaminated equipment, structures, and debris for proper disposal in compliance with state and federal regulations. Decontaminate structures pursuant to applicable state and federal regulations and laws.

(h) Conduct surface and subsurface soil sampling and groundwater sampling to determine the nature and extent of contamination.

(i) Dispose, stabilize, or treat grossly contaminated concrete, asphalt, and/or soils found at or near the surface at the direction of the OSC."

The Order grouped requirements 21 (a-g) as Phase I activities. Requirements 21 (h,i) were termed Phase II activities, to be completed under a separate workplan after Phase I activities had been completed.

3.1 CERCLA ORDER NO. 95-15 PHASE I ACTIVITIES

In June 1995, the Omega property's exterior areas were covered with thousands of 55-gallon drums of hazardous waste, two roll-off bins of hardened resin material, hundreds of empty but contaminated drums on pallets and in two large flat-bed trucks, numerous cylinders of various chlorofluorocarbons or unknown contents with capacities ranging from 15 to 20,000 pounds, numerous tanks and vats containing unknown liquids, and assorted smaller containers of waste and/or hazardous waste scattered around on pallets and on the flat-bed trucks. Inside the warehouse were hundreds more 55-gallon drums of material that Omega claimed to be product, as well as hundreds of containers of hazardous material of smaller (5-20 gallon range) volume. An onsite laboratory in a separate room of the warehouse contained hundreds of chemicals in volumes typically ranging from the milliliter to liter size.

By June 1995, the Respondents of the Order, excluding Mr. O'Meara (the potential responsible parties, or PRPs), had retained an environmental contractor, Harding Lawson Associates (HLA), to conduct the Phase I removal activities. By June 26, 1995, EPA OSC Martyn had determined that a Phase I workplan prepared by HLA was acceptable, and the initiation of Phase I removal activities (also called the Drum Removal Action, or DRA) commenced on June 27, 1995. The Phase I removal activities continued

through September 14, 1995.

Due to potential problems with PRP access to the Omega property, a search warrant arranged by OSC Martyn and issued by the United States Attorney's Office was prepared on June 26, 1995 to ensure access to Omega. TAT brought a copy of the warrant to the site at the initiation of its oversight of the Phase I activities on June 27. The warrant allowed for EPA and PRP contractors to have access to all areas of the Omega property for a period of ninety days, during reasonable business hours, for the purpose of conducting activities required in the Order. On September 25, 1995, the warrant was returned to the United States' District Court, with an attached inventory of all material removed from the Omega property.

The Phase I removal activities included:

- Emptying two flat-bed truck beds of numerous empty and full drums, and decontaminating the trucks to allow Omega removal;
- Characterization, overpacking (as necessary), removal, and disposal of marked drums of hazardous waste located on the exterior portions of the Omega property;
- Characterization, overpacking (as necessary), removal, and disposal of drums and containers of material inside the warehouse;
- Characterization, lab-packing, removal, and disposal of chemicals located in a laboratory in the Omega warehouse;
- Characterization, removal, and disposal (as necessary) of compressed gases (typically chlorofluorocarbons) determined to be non-salvageable, and the return of other compressed gas cylinders to identified previous owners;
- Characterization, crushing, removal, and disposal of drum pallets;
- Characterization, clean-out, removal, and disposal of hazardous material from five 5,000-gallon tanks located on the west side of the warehouse, and the subsequent demolition, removal, and disposal of the tanks themselves;
- Removal and disposal of hazardous material from the office space located at the 12512 Address;
- Steam cleaning, removal, and disposal of piping, electrical conduits, and other no-longer-essential warehouse accouterments; and
- Steam cleaning of various tanks and vats which were to remain on the property, and steam cleaning of exterior surfaces (including concrete pads).

HLA personnel supervised all Phase I activities and conducted site perimeter air monitoring during the activities. The air monitoring entailed the use of up- and down-wind field instrumentation equipped with photo ionization and flame ionization detection (PID and FID), and, at the beginning of the removal, instrumentation for the monitoring of fugitive dust, as well. A meteorological station was placed atop the warehouse. All instruments except for the meteorological station collected readings electronically, and the data were down-loaded at the end of each working day. The meteorological station utilized a strip chart recording method, which was maintained as necessary.

During the drum removal, three air sampling events using up- and down-wind Summa® canisters were conducted, as an additional check on the continuous real-time air monitoring. The Summa® canister sampling events took place on July 21, August 8, and August 15, 1995. The samples were analyzed by EPA Method T014 for common industrial aromatic and chlorinated hydrocarbons. Results of the Summa® canister analyses indicated no significant increase in downwind analyte concentrations.

HLA subcontracted Allwaste of Southern California (Allwaste) to perform the sampling and characterization of material to be removed from the site. Allwaste also provided manpower and equipment (e.g., forklifts and trucks) for the removal of material from the property. Allwaste, in turn, subcontracted several companies to assist with such activities as hazard categorization of unknown

materials and gas cylinder characterization, and Allwaste contracted and provided liaison with the various transport companies and waste disposal facilities.

The Phase I activities resulted in the removal of 3,069 drums of hazardous material or waste; approximately 41,000 gallons of pumpable liquid waste (via vacuum truck); 561 cubic yards of crushed, contaminated wooden pallets and other debris; 60 cubic yards of emptied, crushed drums; 60 cubic yards of hazardous resin material; and hundreds of lab-packed chemicals. The removal required 95 hazardous waste manifests for the transport of waste to various disposal facilities. Disposal methods employed, depending on the type of waste involved, were typically incineration or disposal in an appropriate class of landfill. HLA's report of Phase I activities, *Phase I Report, Drum Removal Action, Omega Chemical Site*, October 13, 1995, and in the EPA public record, details the specifics of the Phase I activities and how and where hazardous materials were disposed (including copies of all manifests).

All hazardous material shipped offsite under manifest required an EPA site identification number. HLA therefore used Omega's EPA identification number, CAD042245001, for this purpose.

Relevant additional information regarding the general aspects of the Phase I removal activities includes:

- All Phase I removal work was conducted with strict adherence to HLA's EPA-approved health and safety plan, and a certified Emergency Medical Technician was made available on site during periods of work where heat stress was a concern;
- Prior to initiation of the Phase I activities, the office and front areas of the warehouse were cleaned up and material belonging to Omega were placed in cubic-yard cardboard "tri-wall" boxes and left in the central area of the warehouse;
- With the exception of two days, all Phase I removal work was conducted with TAT oversight; and
- OSC K. Lawrence assisted OSC Martyn with Phase I investigation management and TAT control, and took over primary EPA management of the Order by the end of the Phase I activities.

3.1.1 Removal of Flat-Bed Trucks

Two flat-bed trucks were located on the easternmost side of the Omega property. The truck beds were filled with 55-gallon drums and 30-gallon drums, most of, but not all of which were empty. Each drum was removed from the truck bed, it's contents hazard categorized, and the material identified combined with partially-full drums of like material. The trucks were then steam cleaned, and scanned with PID/FID field instruments. Upon successful scan, Omega was allowed to remove the trucks from the property.

3.1.2 Drum Removal

Drums removed during the Phase I activities were typically of 55-gallon capacity. HLA identified drums on the exterior portions of the Omega property with an area-specific numbering scheme. Drums of material found inside the warehouse, which Omega professed to be "product" and not subject to the Order, were also identified with a specific numbering scheme.

Drum removal activities began on June 30, 1995. Due to the summer heat and the need to open and sample drums in Level B personal protection, the crews switched to night work on July 17, 1995. The crews stayed on a night shift until August 18, 1995.

3.1.2.1 Drums of Hazardous Waste

All drums of hazardous waste were located on the exterior portions of the Omega property, and were designated by HLA with area-specific identification numbers. Immediately prior to the DRA, START

estimated that there were 2,749 such drums. Each drum was inspected prior to determination of proper disposal method. Drums which were not already open to the atmosphere were opened by technicians in Level B personal protection. Prior to opening each drum, information found on the drum was hand-written into tables of drum characteristics, and the drum was provided with a unique identification number. Once opened, each drum was sampled, by drum thief for liquid contents, and by disposable spoon, trowel, or by gloved hand for various other types of solids found in the drums. Sample volumes collected were sufficient to provide enough sample for hazard categorization, and also for profiling by the disposal facility. Throughout the DRA, daily inspections revealed additional leaking drums, which were immediately overpacked as they were found.

Twelve drums were designated by the Allwaste/HLA personnel as "non-conforming," not compatible with the drums' RCRA Marks, due to the nature of their contents. Such contents included organic peroxide (explosive/reactive, toxic) and various types of "lab-packs" of containers of chemicals, some labeled as "poison," "hydrofluoric acid," "pesticide," or without any labeling at all.

Drums of "lab-packed" chemicals were dealt with by removing all contents, hazard categorizing the contents, and repacking the like categories in smaller drums for removal and disposal. All identifiable chemicals were listed individually on manifests for transport.

Numerous drums were found to be bulging at the time of opening for sampling. However, these drums were typically no longer full, and appeared to have already released gases which caused the drums to bulge. Bulging drums with any contents remaining were carefully vented, sampled, and overpacked.

Drums of hazardous waste were typically shipped to ENSCO of El Dorado, Arkansas for incineration.

3.1.2.2 Empty Drums

In addition to thousands of full drums of hazardous waste, approximately 825 empty drums of 55-gallon or smaller size were crushed and placed in roll-off bins for transport and disposal. Waste liquids from the drum crusher were collected, characterized, and added to partially-full drums of like material. The crushed empty drums were shipped to Laidlaw Environmental (Westmoreland, California) for Class I landfill disposal.

3.1.2.3 Drums of Material Claimed by Omega to be Product

Drums typically located inside the warehouse were claimed by Omega to be product not under the requirements of the Order, and were therefore assumed to be product during the initial phases of the DRA. From the beginning of the DRA, EPA required that Omega provide documentation proving that such materials were, in fact, product. Omega never provided such documentation, and therefore, toward the end of the DRA, these drums were removed and transported for disposal. Due to the volatile nature of the contents of these drums, which are described by HLA as primarily containing industrial cleaning solvents, a refrigerated truck was used for transport of certain of these drums containing liquids with low boiling points.

3.1.3 Laboratory Chemical Removal

Per direction of OSC Martyn, the various chemicals found in the warehouse laboratory were lab-packed, transported offsite and disposed of by appropriate disposal facilities. Prior to initiating the lab-packing of the chemicals, a complete inventory was conducted. Chemical types found were typical of analytical laboratories, with various acids, bases, inert solids, and reactive solids and liquids. Among the more dangerous situations noted in the laboratory was the storage of sulfuric acid and sodium cyanide in the same cabinet. In addition, outside the eastern laboratory wall (inside the warehouse), a metal cabinet

contained numerous additional chemicals, including a small (85 gram) jar of uranyl nitrate, which had radioactive and explosive properties.

Lab-packs were prepared by filling five-gallon plastic containers with chemicals of similar compatibility, using a liberal amount of vermiculite packing material to prevent jarring and breakage.

The uranyl nitrate was shipped to NSSI/Recovery Services of Houston, Texas for disposal by chemical reduction. The remainder of the lab-packed chemicals were shipped to ENSCO for incineration.

3.1.4 Removal of Compressed Gases and liquid Chlorofluorocarbons

Two hundred twelve gas/liquid cylinders were identified on the Omega property, which had to be assessed individually. An additional 20 cylinders were brought to the site for transfer of waste refrigerants. Each un-empty cylinder suspected to contain chlorofluorocarbons was sampled, and samples were sent for analysis to Integral Sciences Incorporated, of Columbus, Ohio (ISI), a laboratory capable of "Freon®" characterization. Of the 212 containers, 67 were sent offsite for reclamation or incineration, or returned to identified generators, and 165 were left onsite, either empty or containing usable product.

The refrigerant shipped offsite had been characterized by HLA based upon ISI analytical results as either reclaimable, or as waste. Reclaimable refrigerant material was shipped to RRCA of Ontario, California, or to Full-Cycle Global, of Fort Worth, Texas, for reclamation. Waste refrigerant was shipped to Rollins Environmental Services of Bridgeport, New Jersey for incineration.

One large white cylinder with a 20,000-pound capacity for refrigerant was located on Omega's exterior property, to the east of the warehouse. Mr. O'Meara claimed the refrigerant in the cylinder to be product (R-22, or chlorodifluoromethane) and worth a significant amount of money. However, analysis of the R-22 in this cylinder showed it to be out-of-specification, requiring a disposal fee. The contents of this tank was therefore drained into a tank truck and transported for reclamation.

3.1.5 Removal of Pallets

To determine the appropriate method of disposal for the hundreds of pallets remaining on the Omega property upon completion of the DRA, HLA collected chip samples from typical soiled pallets. The chips were combined into a single composite sample, which was sent for off-site laboratory analysis for volatiles (EPA 8240), semivolatiles (EPA 8270), California Title 22 metals, and toxic characteristic leaching potential (TCLP) metals. Based on the sample results, the pallets were determined to be appropriate for disposal in a Class I landfill. The pallets were therefore crushed using a tracked excavator and with water misting to eliminate fugitive dust, and the crushed material was shipped for disposal at Chemical Waste Management's Azusa, California facility.

3.1.6 5,000-Gallon Tank Clean-Out and Destruction

Each of the five 5,000-gallon tanks located adjacent to the west side of the warehouse contained two to three feet of sludge material. Each tank was sampled, and the contents characterized for hazard class, which was determined for all tanks to be "high halide," and for three of the tanks, "medium BTU." A composite sample collected from the tanks, sent for offsite analysis, indicated that the five tanks contained concentrations of mercury requiring expensive disposal. As a result, the contents of each tank was removed via water wash from portals on the top of the tanks, with waste rinsate pumped into vacuum trucks. The interiors of the tanks were then steam-cleaned via confined-space entry from man-ways on the side of the tanks, and the rinsate was again pumped into vacuum trucks. During the tank contents vacuuming operations, volatile gases were found to be emanating from the tops of the tanks. As a result, a carbon-based vapor recovery system was placed on the top of each tank during tank washout. Upon

completion of the tank washouts, the PRP group determined that it would be more cost-effective to destroy and remove the tanks, rather than attempt to clean them to a degree that would allow the tanks to remain on site. Therefore, on September 1, 1995, the tanks were pulled down and crushed, and transported offsite for disposal in roll-off bins.

The sludge/rinsate from the tanks was shipped to Rollins Environmental Services for incineration. The crushed tanks were shipped to a Class I landfill for disposal.

3.1.7 Removal of Hazardous Material from Office Space at 12512 Address

Toward the end of the DRA, numerous drums, cylinders, and containers of hazardous material were discovered in a back room of Omega's office space located at the 12512 East Whittier Boulevard address. All such material was inventoried and removed to the Omega warehouse. On September 7, 1995, at EPA's direction, TAT notified Omega that they had 24 hours to prove that any of the material removed from the Omega office space was a viable product. On September 12, after no response from Omega, all material was characterized as necessary, and transported offsite for proper disposal, with the exception of 21 80-pound bags of calcium chloride.

3.1.8 Removal of Loose Warehouse Piping, Conduit, and Other Material

Numerous pieces of piping, conduit, and other similar material which were very soiled due to previous Omega operational activities were determined to be not worth the effort of steam-cleaning. These pieces, typically found in the back room/loading dock area of the warehouse, were cut up and placed in roll-off bins or tri-walls for transport and disposal. The material was landfilled by Chemical Waste Management, Kettleman City, California.

3.1.9 Removal of Resin Waste from On-Site Roll-Off Bins

Two roll-off bins were located on the exterior Omega property to the east of the warehouse. The roll-off bins contained translucent resin material in the shape of 55-gallon drums. This material was sampled, and was found to contain heavy metals exceeding California waste-determining total threshold limit concentrations (TTLCs). As a result, the material was broken apart using a hydraulic concrete breaker, and the material was placed into plastic-lined tri-wall boxes which were covered and shipped offsite for incineration at Rollins OPC.

3.1.10 Steam Cleaning of Tanks, Vats, and Exterior Property Surfaces

Numerous stainless-steel tanks and vats typically in the 500- to 2,000-gallon capacity were located around the exterior portions of the Omega property. As necessary, contents of these containers were characterized and subsequently vacuumed into vacuum trucks. The containers were then steam cleaned and wipe sampled to verify that they no longer had hazardous characteristics. The wipe sample analytical suite included RCRA metals (EPA 6010/7000 series), VOCs (EPA 8240), and semivolatile compounds (EPA 8270). The samples were analyzed by Del Mar Laboratories of Irvine, California, a California-certified laboratory. Typically, the wipe sampling results indicated that the containers were adequately clean. In several instances, however, the wipe sampling results showed continued contamination, and the container was re-steam cleaned and re-wipe sampled. Once documented to be clean, the decontaminated containers were allowed to remain on the Omega property. The rinsate was shipped to Chemical Waste Management, Rollins OPC (Los Angeles, California), and Appropriate Technologies II (Chula Vista, California) for treatment.

3.1.11 Removal of On-Site Standing Water

Rainwater standing on the back of the property was sampled on June 29, 1995. The water was analyzed by an off-site, state-certified laboratory for pH, VOCs, semi-volatile organic compounds, and Title 22 metals. Based on the analytical results, OSC Martyn allowed this water to be vacuumed up by vacuum truck and combined with water and rinsate from steam cleaning operations described in Section 3.1.10.

3.2 CERCLA ORDER NO. 95-15 PHASE II ACTIVITIES

By mid-September 1995, the Phase I removal activities at Omega were completed, and the Omega property no longer contained above-ground hazardous materials and/or wastes. By this time, exterior areas of the Omega property were empty except for cleaned and/or evacuated tanks and other containers. The "Phase II" requirements of the Order (Paragraphs 21[h,i]) required that the Respondents conduct surface and subsurface soil sampling, as well as groundwater sampling, in order to determine the nature and extent of contamination caused by conditions at the Omega site; and dispose, stabilize or treat grossly-contaminated material found at or near the surface of the ground at the site. As with the Phase I activities, Respondent Mr. O'Meara was not inclined to comply with the Order, and the remaining Respondents (PRPs) arranged to comply with the Order on their own.

By October 1995, the PRPs hired England & Associates of Irvine, California, and Hargis + Associates, Incorporated, of La Jolla, California (England/Hargis) to conduct the Phase II work. England/Hargis began site work under an EPA-approved workplan on November 7, 1995. The work was conducted in steps, with each step being followed by submittal of a technical memorandum describing the activities conducted and the expected next step in the investigation process. In all, 11 technical memoranda were prepared and submitted to the EPA to address site Phase II activities. Phase II operations at the Omega site ceased in March, 1997. Figure 2, originally prepared by England/Hargis for the Phase II final report, indicates many of the sampling locations discussed in following sections.

England/Hargis' Phase II work included:

- A review of all available information regarding other potential sources of groundwater contamination in the vicinity of the Omega site;
- An attempt to locate ENSR's well previously installed on the property in 1988;
- A soil gas investigation;
- Installation of a shallow soil vapor extraction test well;
- Shallow and deep soil sampling;
- Excavation and removal of loading dock sump soil and sampling beneath two loading dock sumps;
- On-site and off-site cone penetrometer testing (CPT) and hydropunch water sampling; and
- Groundwater sampling from a soil boring drilled and a groundwater well installed.

All the above activities are described in detail and with attached documentation in England/Hargis' *Phase II Close Out Report, Omega Chemical, Whittier, California*, October 1, 1996 plus its Technical Memoranda Numbers 10, 11, and 11A (through April 30, 1997). The following sections briefly describe these activities and their results.

3.2.1 Information Review

England/Hargis reviewed various sources of information, such as government databases of environmental contaminant sources, local agency files, aerial photograph archives, and geological and hydrogeological literature, to determine possible sources of groundwater contamination in the vicinity of Omega. As a result of the review, four sites with documented chlorinated hydrocarbon contamination were found within a one-half mile radius of the Omega site: Leggett & Platt (a furniture manufacturing facility),

G&M Oil Company (a fuel service station), Jones Chevrolet (a former auto dealership), and a former Chevron station. England/Hargis obtained water levels for wells on these four properties, and used the information to determine the groundwater gradient in the vicinity of Omega. In addition to these four potential sources with documented groundwater contamination, England/Hargis identified two neighboring properties to Omega with potential sources for groundwater contamination: Cal-Air, Incorporated (Cal-Air, an air conditioning contractor), and Terra-Pave, Incorporated (Terra-Pave, a paving company).

England/Hargis determined the shallow groundwater gradient in the vicinity of Omega to be towards the southwest. This and other information gathered by England/Hargis was used to assist in the determination of optimum CPT/hydropunch locations. Although the four documented near-by releasers of contamination were found by England/Hargis to be cross-gradient or down-gradient (groundwater) to Omega, England/Hargis has attempted to implicate Cal-Air and Terra-Pave as possible sources of Omega site groundwater contamination.

3.2.2 Search for ENSR Well

England/Hargis attempted to locate the groundwater well ENSR had installed on the Omega property in 1988, in order to attempt to re-open the well. A general location for the well was known from the ENSR report, and Mr. O'Meara also indicated, on the concrete to the west of the warehouse, the approximate location of the well. Geophysical instruments were unable to detect any anomaly in the area, and, as the area was covered with slab concrete, the well location effort was abandoned.

3.2.3 Soil Gas Investigation

Soil gas samples were collected from 31 locations on the Omega property. In most locations, samples were collected at 6- and 12-foot depths. In two of the locations, refusal was encountered at 3.5 and 6 feet below ground surface, respectively. In four of the locations, samples were collected at additional/other depths: 16.7 feet in soil gas (SG) location 4, 24 feet in SG 16, 24 feet in SG-19, and 13 feet (instead of 12) in SG-26. The soil gas samples were collected using a hydraulically pushed/hammered hollow steel drive rod, Teflon tubing, and syringes. An on-site mobile laboratory equipped with a gas chromatograph was used to provide immediate results.

The soil gas samples were analyzed for halogenated organic compounds specified by England/Hargis, and benzene, toluene, ethyl benzene, and total xylenes (BTEX). In all but four of the 63 samples analyzed, chlorinated hydrocarbon contaminants were detected. The four samples with no analytical hits were from two soil gas locations: SG-1 and SG-15, located on the southwest corner of the Omega property and the west border of the property, respectively. Most samples contained various Freon® compounds, and the major contaminants were tetrachloroethylene (PCE), 1,1,1-trichloroethane (TCA), 1,1-dichloroethylene (1,1-DCE), trichlorofluoromethane (Freon-11), and 1,1,2-trichlorotrifluoroethane (Freon-113). In addition, the contaminant concentrations increased with depth at most locations. Concentrations detected in the samples ranged up to a maximum of 840,000 μg/L (107,600 ppmv) of Freon-113 in SG-10, collected from a filled-in sump in the loading dock of the warehouse.

The results of the soil gas survey indicated that most areas of the property had detectable concentrations of chlorinated hydrocarbons. Although the contamination was found throughout most of the site, the most contaminated areas appeared to be in the rear areas of the property, especially the west corner and behind the warehouse.

3.2.4 Vapor Extraction Test Well

England/Hargis installed vapor extraction test well SVE-1 behind the warehouse. The well was screened

to a total depth of 10.6 feet bgs. A vacuum step test was conducted on the well, to determine the zone of influence of the extraction attempt. Based on the results of the step test, England/Hargis determined that a vapor extraction program at the Omega site was not appropriate.

3.2.5 Shallow Soil Sampling

Shallow soil sampling was conducted at 15 locations about the Omega property, typically at approximately one- and six-foot depths. The borings were advanced by hand auger after holes had been cut in the concrete, and samples were collected by a sample coring device equipped with brass sleeves. The samples were sent for off-site analysis by a California-approved laboratory, and were analyzed for VOCs by EPA Method 8240. Eighteen of the samples (15 shallow, and the six-foot samples from soil borings 9, 11, and 12) were also analyzed for semivolatile organic compounds by EPA Method 8270, for chlorinated pesticides and polychlorinated biphenyls (PCBs) by EPA Methods 8080, and California Title 22 metals.

The following results from the shallow soil sampling were obtained:

VOC Results

As with the soil gas survey, the most contaminated areas were discovered to be located on the back and west portions of the Omega property. PCE and TCA were the major VOCs identified, although the SB-9 samples, collected in the same sump area as SG-10, contained higher concentrations of more analytes. At this location, the contaminants of highest concentration were PCE at 1,300 mg/Kg (ppm) and TCA at 1,200 mg/Kg. Outside the sump, SB-11, located immediately behind the loading dock and adjacent to the Terra-Pave property, contained PCE at concentrations up to 260 mg/Kg.

Semivolatile Organic Compound Results

Only three sample locations contained semivolatile organic compounds in measurable concentrations. None of the four analytes detected were found in concentrations expected to be of concern.

California Title 22 Metals

Of the 13 California Title 22 metals investigated, four metals were undetected in the soil samples. Mercury, arsenic, chromium, lead, and beryllium were some of the analytes which were detected in the soil samples. The sample with the highest concentrations relative to the others was SB-12 (shallow), located behind and to the east of the warehouse. England/Hargis noted that arsenic was the only analyte to exceed its EPA Preliminary Remediation Goal (2.4 mg/Kg for arsenic), which was exceeded in 13 of the 18 samples.

Chlorinated Pesticides and PCBs

PCB Aroclor 1254 was the only PCB analyte detected in any of the samples. The Aroclor was detected in sample location SB-12 at a concentration of 0.21 mg/Kg at 1.7 feet bgs, and the concentration decreased to 0.052 mg/Kg at 6.5 feet bgs.

DDT and/or its breakdown products DDD and DDE were found in locations SB-4, SB-5, SB-14, and SB-15. The maximum concentration found was 0.013 mg/Kg DDT, found in SB-15. The concentrations decreased with depth at each location. The locations indicate a broad spread of the pesticide across the central portion of the Omega property. Other than DDT, DDD, and DDE, no other pesticides were found in the soil samples.

3.2.6 Excavation of Warehouse Sump

At the beginning of EPA involvement at Omega, two concrete sumps were identified in the loading dock area of the warehouse. One large, rectangular sump was open and free of any obvious contents. The other sump, located to the south of the rectangular sump, is square in dimension and was filled with soil and gravel material and covered with damaged and cracked concrete. It was in this sump that soil boring SB-9 indicated the highest concentrations of contaminants to be found on the Omega property.

In September 1996, this sump was excavated by England/Hargis. A small "bobcat" backhoe was used to shovel out the contents of the sump. The soil material was placed in ten tri-wall boxes and shipped offsite under manifest for destruction. The sump was found to have concrete walls and floor, which were manually cleaned.

Both sump floors were then cored and 0.5- and 5-foot soil samples collected from the soil below. The samples were analyzed for VOCs by EPA Method 8240. The analytical results indicated that the main contaminant was again PCE, but the concentrations were typically only in the 5 to 10 mg/Kg range.

3.2.7 Deep Soil and Groundwater Sampling, First Event

Based on the soil gas and shallow soil sample results, deeper soil sampling and groundwater sampling were required to determine the extent of contamination. Three episodes of deep soil and groundwater sampling were conducted, increasing distally from the Omega site with each episode. Prior to any work, England/Hargis recommended to the PRP group that several CPT-type soil and water sampling borings be placed to the west of SB-11 (behind the warehouse) on Terra-Pave property. This plan was also the opinion of the EPA. Such a location would have been optimum, as it would have been immediately down-gradient from SB-11. However, the PRP group refused to conduct such an investigation on a piece of property neighboring Omega, apparently for legal reasons. Additional CPT locations in the first sampling episode were therefore moved onto the Omega property, near SB-12.

The first deep sampling episode occurred on January 29 and February 1, 1996. Ten holes were advanced by CPT, designated H-1 through H-5, C-1 through C-3, C-7 and C-7A. Locations H-1 through H-4 were used to collect water level readings and water samples through a temporarily-installed piezometer, as well as soil samples. Groundwater from two different depths was collected from location H-4. Location H-5, the only CPT attempted off the Omega property (on Putnam Drive, in front of Terra-Pave), hit refusal at 69 feet bgs before any soil or water samples were collected. Locations with "C" designations were sampled every 15 feet for soil only, to a maximum depth of 75 feet bgs. Soil and water samples were analyzed for VOCs by EPA Method 8240, with additional Freon®-type compounds added to the analytical suite.

Results of the first deep sampling episode confirmed a groundwater gradient to the southwest, and confirmed chlorinated hydrocarbon contamination in soil and water:

Soil samples were mainly contaminated with PCE, with lesser amounts of TCE and DCE and other chlorinated hydrocarbons. PCE contamination tended to increase with depth, to a maximum concentration of 37 mg/Kg at 52 feet bgs in CPT location C-7A, located adjacent to SB-12. Twenty-three out of 24 soil samples collected contained PCE, and all soil samples had detectable concentrations of analytes. As with previous investigations, the deep soil sample results indicated a concentration gradient for contaminants which increased toward the back of the Omega property.

One water sample was collected from each of the four "H"-designated locations from a screened interval depth of 70-85 feet bgs. A second water sample was collected from location H-4 from an interval of 57-72 feet bgs. PCE and other VOCs were found in all five samples. As with the soil samples analyzed,

PCE was the major contaminant detected, up to a maximum concentration of 86,000 μg/L in the shallower H-4 sample. Significant concentrations (ppm range) of other chlorinated hydrocarbons and Freons were detected in the samples. As with previous investigations, the water sample results indicated a concentration gradient for contaminants which increased toward the back of the Omega property.

Based on the results of the deep soil and groundwater sampling, England/Hargis and the PRP group acknowledged that additional investigation would be required to determine the nature and extent of contamination at Omega.

An account of the first episode of deep soil and groundwater sampling, including analytical tables and maps, is available in the England/Hargis final report, Appendix A, Technical Memorandum No. 6.

3.2.8 Deep Soil and Groundwater Sampling, Second Event

Based on the results of activities described in Section 3.2.6, additional subsurface soil and groundwater investigations were conducted at Omega.

3.2.8.1 Deep Soil Boring B-4

On May 23 and 24, 1996, a deep soil boring was drilled gain information regarding the vertical gradient of VOCs in the vicinity of SB-11, located behind the loading dock of the Omega warehouse. The boring was drilled using a hollow-stem auger and continuous coring. Each core was screened for dense, non-aqueous phase liquid (DNAPL) using ultraviolet light and/or use of a reactant dye. No DNAPL was found in the soil cores. The boring was drilled to a total depth of 75 feet bgs, and sampled at intervals of five to ten feet. Once the boring was advanced to total depth, a water sample was collected via a temporary piezometer. Soil and water samples were analyzed for VOCs by EPA Method 8240.

A total of ten soil samples were collected, at depths ranging from five to 75 feet bgs. Results of the sampling again indicated that the major contaminant was PCE. Soil sample concentrations for this contaminant ranged from 1.9 to 510 mg/Kg, and concentrations detected did not correspond in any obvious way with depth. The water sample collected at 75 feet bgs contained PCE at a concentration of 81,000 μg/L.

3.2.8.2 Installation of On-Site Well OW-1

On June 4 and 5, 1996, England/Hargis installed a permanent monitoring well, designated OW-1, adjacent to CPT location H-4, south of the Omega warehouse. The well was set with a screened interval of 62.5-77.5 feet bgs. The well was designed with blank casing below the screened interval, in order to trap any accumulation of DNAPL. An initial water sample from the well was analyzed for VOCs by EPA Method 8240. As for the B-4 water sample, PCE was the contaminant detected in the highest concentration, also with a concentration of 81,000 μg/L.

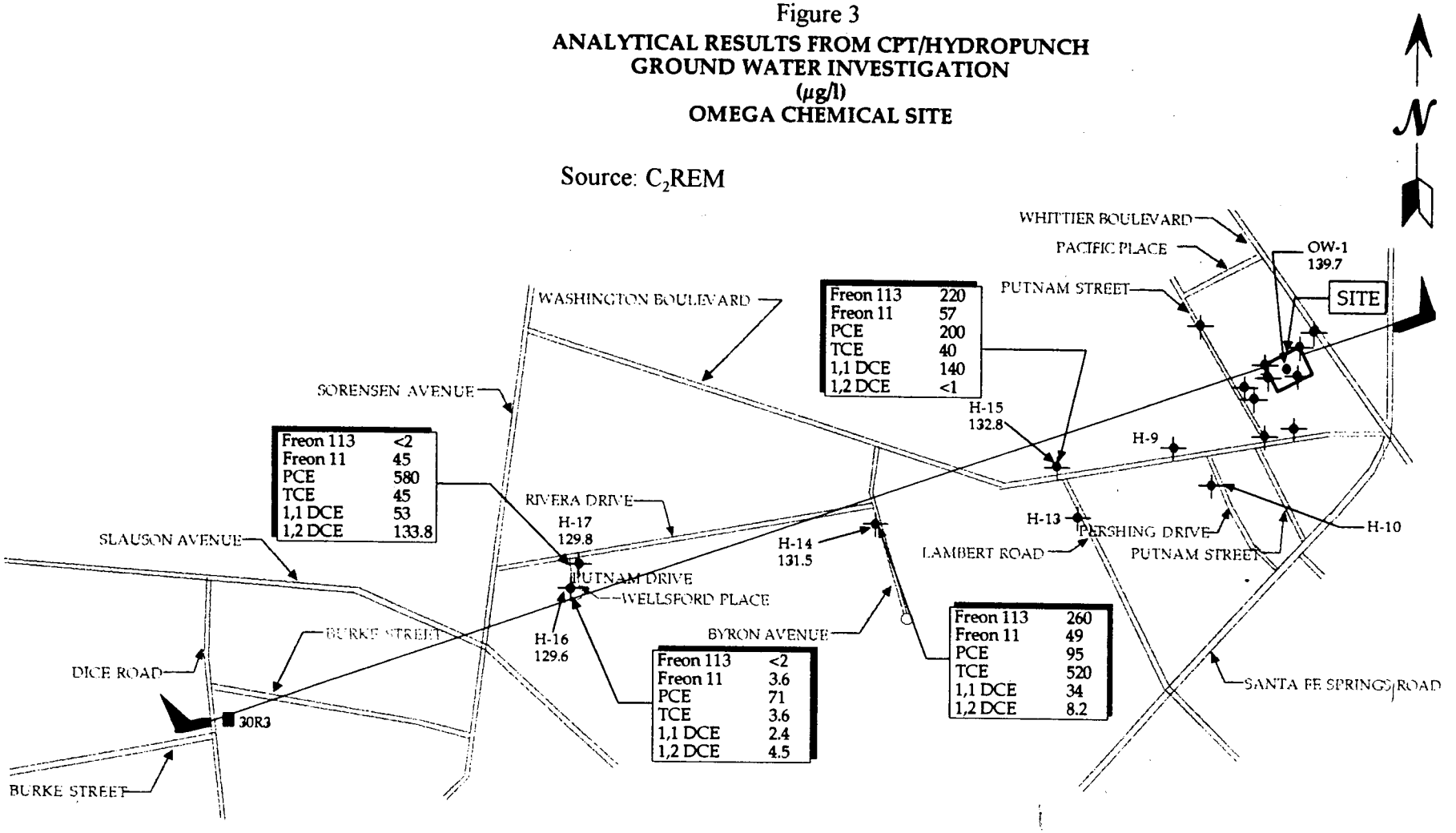
3.2.8.3 Off-Site CPT/Hydropunch Investigation

As a result of previous CPT/hydropunch investigations which identified chlorinated hydrocarbon contamination in groundwater on the Omega property, a series of seven additional CPT/hydropunch investigations were conducted up-gradient, down-gradient and cross-gradient to the Omega property in July 1996 (Figure 3). The CPT/hydropunch locations were designated H-6 through H-12. A single water sample was collected from each location except H-6, from which two water samples from different depths (70 feet and 86 feet bgs) were collected. Location H-12 was placed up-gradient of Omega, in the Whittier Boulevard access road. Locations H-6, H-7, and H-11 were placed adjacent to Putnam Drive, down- and cross-gradient to Omega. H-8 was placed cross-gradient to Omega, at a location adjacent to Washington

Figure 3

ANALYTICAL RESULTS FROM CPT/HYDROPUNCH GROUND WATER INVESTIGATION
(µg/l)
OMEGA CHEMICAL SITE

Source: C_2REM



Boulevard. H-9, H-10, and H-13 were placed approximately down-gradient of Omega, in Washington Boulevard, Persing Drive, and Lambert Road. H-13, the location furthest from Omega, is approximately 1,500 feet down-gradient of Omega.

The water samples collected from each CPT/hydropunch location were analyzed for VOCs by EPA Method 8240. All samples were found to contain PCE, Freon-11, and Freon-113, and lesser concentrations of other chlorinated hydrocarbons. Up-gradient and cross-gradient locations typically contained contaminants in lower concentrations than the down-gradient locations. Location H-6, at the shallower, 70-foot sample depth contained the highest concentrations of contaminants found offsite, with PCE at 33,000 μg/L, methylene chloride at 100,000 μg/L, and numerous other chlorinated hydrocarbons in the 5,000 to 25,000 μg/L concentration range. H-13, the location furthest down-gradient from Omega, still contained PCE, at 1,100 μg/L, as well as Freon-113 at 2,600 μg/L and other chlorinated hydrocarbons at lesser concentrations (Figure 3).

As a result of the second event of deep soil and groundwater sampling, EPA required the PRP group to continue sampling down-gradient in order to determine the nature and extent of contamination.

3.2.9 Off-Site CPT/Hydropunch Investigation, Third Event

On March 11 and 12, 1997, in order to comply with an EPA directive, the PRP group and England/Hargis conducted CPT/hydropunch groundwater sampling at four more down-gradient locations, H-14 through H-17 (Figure 3). The water samples collected from these locations were analyzed for VOCs by EPA Method 8240. H-16 and H-17 were located farthest downgradient, at a distance of approximately one mile west-southwest of the Omega site. These two locations' water sample analyses both indicated continued chlorohydrocarbon contamination, with PCE found at a concentration of 580 μg/L and 1,2-dichloroethylene found at a concentration of 134 μg/L in H-17. H-16 contained lesser but still significant concentrations of contaminants, with a maximum PCE concentration of 71 μg/L. H-14 and H-15, located approximately 3,000 and 1,500 feet downgradient of the site, respectively, contained concentrations of contaminants proportionally higher.

START collected spilt samples of these water samples, and the results reported by England/Hargis were adequately corroborated.

4.0 CONCLUSIONS

The Phase I removal of on-site contaminated material adequately addressed the requirements of the Order. However, the Phase II investigation has indicated that contamination in groundwater is still present at a distance of approximately one mile downgradient of the Omega site. As the one-mile distance was the extent of the Phase II investigation, and as contaminants were still found in groundwater at this distance, it does not appear that a requirement of the Order, i.e., to determine the nature and extent of contamination, has been satisfied. Other sources for the contamination are possible; however, there is not enough investigatory information to preclude Omega as the major contamination source.

Appendix A

Leroy Crandall and Associates Investigation Report

LeROY CRANDALL AND ASSOCIATES consulting geotechnical engineers, 711 n. alvarado st., los angeles, ca. 90026, (213) 413-3550, telex 69-837

ATTACHMENT A

June 26, 1985

Omega Chemical Corporation
Bachelor Chemical Processing Division
12504 East Whittier Boulevard
Whittier, California 90608

(Our Job No. E-85127)

Attention: Mr. Steve Simpson
Plant Manager

Gentlemen:

Investigation of Subsurface Soil
Contamination at Tank Farm
Omega Chemical Corporation
Whittier, California

INTRODUCTION

An official notice of Violation No. 248888 from the Los Angeles County Department of Health Services was issued on April 5, 1985, to the Omega Chemical Corporation; the notice of violation addressed the following issues:

1. Removal and disposal of contaminated soils and asphalt from the tank farm at the rear of the yard, and to provide a clean-up plan outlining the extent of contamination.

2. Provide an impervious surface to protect soil and ground water from contamination.

3. Provide a complete copy of the hazardous waste manifest for the disposal of waste by May 1, 1985.

— NO R+D COMPLETED

In order to comply with Point 1 of the notice of violation, a subsurface soils investigation was conducted.

DOHS 1 of

This report presents the results of our investigation of the subsurface soils beneath the tank farm at the Omega Chemical Corporation site located at 12504 East Whittier Boulevard, Whittier. The work was planned in collaboration with Mr. Steve Simpson, Plant Manager. The work was authorized by Mr. Steve Simpson under Omega Chemical Corporation Purchase Order No. 013061, issued on April 16, 1985.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable engineering geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report.

SITE CONDITIONS

The tank farm consists of five 5,000-gallon tanks within a three- to four-foot high concrete block wall. The tanks are perched on a gravel-filled steel cylinder which rises about one foot above ground surface. Three to four inches of asphaltic concrete overlies fill soils and forms a gently south sloping surface.

It is our understanding that sporadic spillage of chemicals from the tanks has occurred. In addition, rainwater runoff has been collected and placed in the tank farm area for temporary containment until it is removed by vacuum trucks.

The gentle south sloping surface has resulted in ponding of fluid primarily at the south end of the tank farm as evidenced by greatest decomposition of the surface asphalt in this area and fluid level stains on the inside of the concrete block wall.

FIELD WORK

Four borings were drilled to depths of six feet below ground surface. Additional work was conducted on May 30, 1985 with drilling of two more boreholes. The borings were drilled using six-inch diameter hand auger equipment. The boring locations are shown on Plate 1, Boring Location Map. The materials encountered in the borings were logged by our geologist using the Unified Soils Classification. The logs of the borings are presented on Plates 2.1 through 2.3, Log of Boring. Soil samples in each boring were obtained at approximately a 1-foot depth, and at 3½ and 5½ feet below the ground surface. The samples were obtained by driving our standard ring sampler one foot into undisturbed soil. The recovered samples were put into clean glass jars. The tops of the jars were covered with aluminum foil and a cap was screwed on over the aluminum foil. After each sample was taken, it was placed immediately into an ice chest. The drive sampler was disassembled and decontaminated between sampling intervals by the following procedure:

1. All excess soil was scraped off from the sampler parts.
2. The sampler was placed in a bucket containing tap water and scrubbed with a sponge to remove soils.
3. The sampler was then washed with a solution of tap water and alconox.
4. The sampler was rinsed in tap water, then rinsed with distilled water.

This process was repeated prior to obtaining subsequent samples. All wash and rinse water was disposed of by placing in a 55-gallon barrel after completion of each boring. Fresh wash solution and rinse water was supplied for the next boring.

Upon completion of drilling and sampling, the boreholes were backfilled with the borehole materials and tamped with the auger. The soil samples that were collected were taken the same day to Analytical Research Laboratories Inc. of Monrovia, California, for analysis.

The soil samples were analyzed for 1,1,1 trichloroethane, methylene chloride, trichloroethylene, and tetrachloroethylene.

FINDINGS

The asphalt surface which was present in the tank farm, was found to be varying conditions. The asphaltic materials in the south-east end of the tank farm was soft and decomposed. The base course beneath the asphalt was discolored and odoriferous. The asphalt at the northwest end of the tank farm was hard.

The asphaltic materials inspected in Borings 2 and 3 located near the central part of the tank farm, was moderately firm to hard and moderately decomposed.

The soils encountered in the borings consisted of artificial fill and natural alluvial materials. The depth of fill ranged from 3½ to 4 feet below ground surface. The fill consisted of blue-grey to dark grey clayey silt and silty sand with some brick and concrete debris. The fill was strongly odoriferous in Boring 1 and moderately odoriferous in Borings 2 and 3. No odor was detected in Boring 4.

Natural alluvial materials were encountered beneath the fill. The alluvium consists of yellowish-brown clayey silt with fine sand and few pebbles.

Odor was detected with decreasing intensity to a depth of about five feet in Borings 1 and 2, and to a depth of three feet in Boring 3. No detectable odor was present in Boring 4.

The results of the laboratory analysis are presented at the back of this report. The laboratory analysis shows that all samples from Boring 1 were contaminated. The highest concentration of contamination was found in the sample collected at 3.5 feet below ground surface.

From Boring 2, only the samples collected from one foot below ground surface showed contamination. All other samples collected were "clean". The laboratory results are supportive of the field observations made of the subsurface materials.

ADDITIONAL WORK

Due to the contamination found in all samples obtained from Boring 1 it was decided to proceed with further soil sampling and testing. The additional work was authorized by Mr. Steve Simpson of Omega Chemical Corporation on May 30, 1985. Boring 1a an extension of Boring 1 was drilled using hand equipment. Samples were taken at 7 feet and 8½ feet below ground surface. An additional boring (Boring 5) was hand drilled just outside the tank farm to the southeast. Samples were taken in Boring 5 at depths of 1 foot, 3 feet, 5 feet, and 7 feet.

Around 7 feet to 7½ feet a sand layer was encountered with 5% to 10% gravel up to 3 inches in size. Because of the inability to penetrate through this layer with hand auger equipment, no sample was taken at 9 feet.

The samples were recovered and stored in the same manner as described for the first phase of work. The laboratory results of the six soil samples taken in Borings 1a and 5 are presented at the back of this report. Boring 1a at seven feet below ground surface contained a small amount of tetrachloroethylene. However, all four of the compounds of interest were less than 0.1ppm at 8.5 feet below ground surface.

Boring 5 at one foot below ground surface yielded materials which were contaminated with all the compounds of interest and an additional compound, 1, 2 dichloroethane. Tetrachloroethylene was the only compound found in the remaining samples, with decreasing concentration in progressively deeper soil samples.

CONCLUSIONS

The contamination of surface materials is a product of accidental spillage of chemicals stored in the tank farm and ponding of rainwater in the tank farm. This conclusion is supported by the fact that the greatest depth of contamination coincides with the greatest depth of surface ponded fluids. Subsurface contamination does exist immediately southeast of the tank farm as indicated by Boring 5. The greatest depth of contamination was encountered in Boring 1, 1a. The sample from Boring 1a at 8.5 feet was free of contaminants. Soil outside the tank farm encountered in Boring 5 was found to contain measurable contamination only at the one foot level. The decreasing low level concentration of tetrachloroethylene in deeper samples would indicate vertical contamination of the subsurface soils is of limited extent.

Should you have any further questions or desire additional information, please contact us at your earliest convenience.

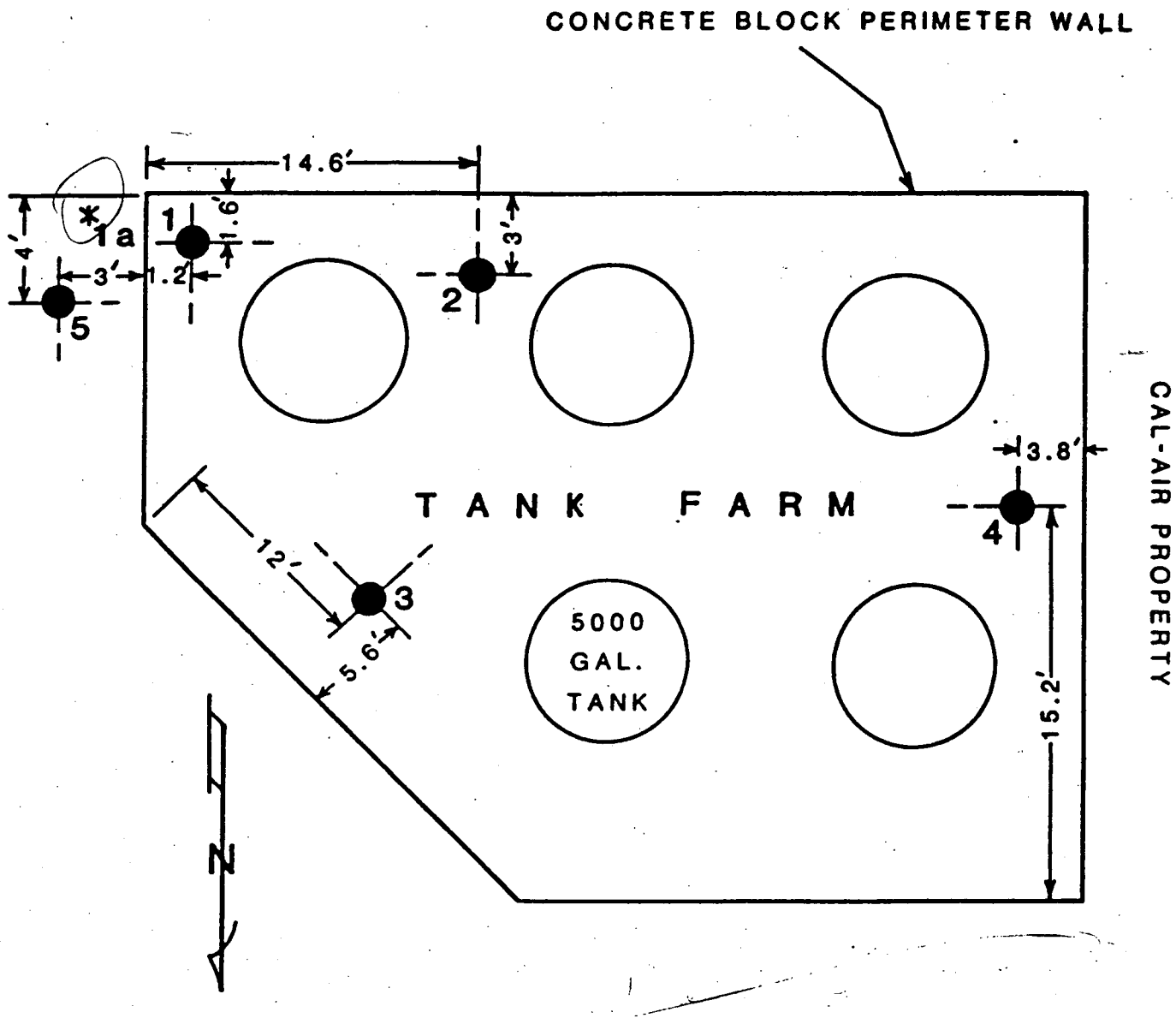
Yours very truly,

LeROY CRANDALL AND ASSOCIATES

by Brian Villalobos
Brian Villalobos
Staff Geologist

by Glenn A Brown
Glenn A. Brown, C.E.G. 3
Director of Geological Services

B5/bmc
Attachments (8)
(3 copies submitted)



NOT TO SCALE

3 ● BORING LOCATION AND DESIGNATION

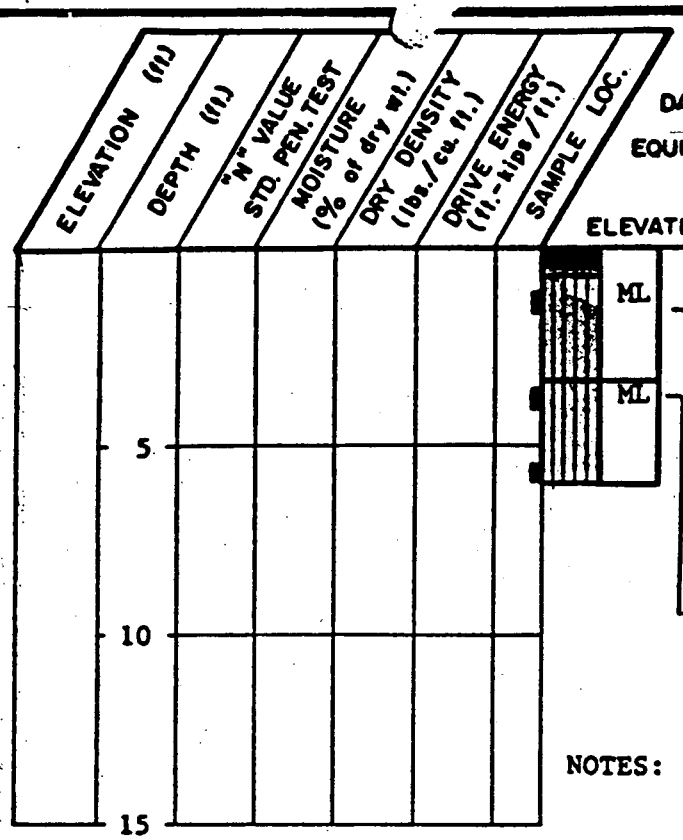
* NOTE: BORING 1a IS A LATER EXTENSION OF BORING 1.

BORING LOCATION MAP

BORING 1

DATE DRILLED: April 22, 1985

EQUIPMENT USED: 6"-Diameter Hand Auger



3" Asphaltic Concrete, decomposed surface is loose

FILL - Gravel base, Silty Sand, fine to coarse Sand with gravel, moderate amounts of Silt and Clay, yellowish-orange

FILL - CLAYEY SILT - soft, slightly damp to damp, dark grey to dark bluish-grey
Strong sweet odor
At 2' small pieces of concrete and brick, yellowish-brown mottling, blue-purple sheen on soil

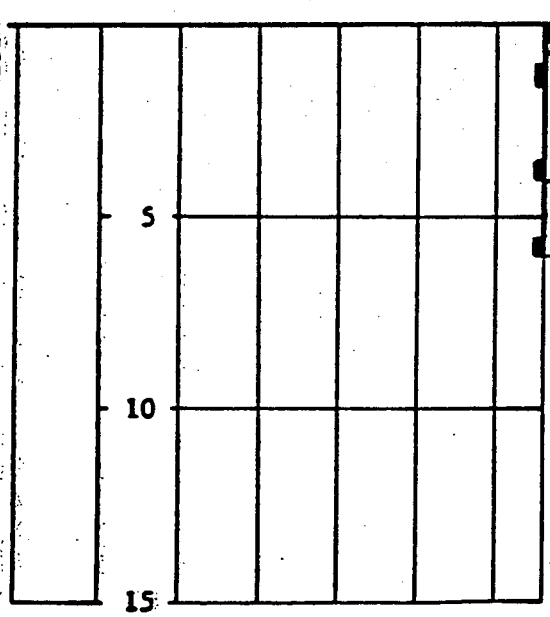
CLAYEY SILT - slight amounts of fine Sand, few pebbles, yellowish-brown, moderately strong odor
At 4.5' moderate odor
At 6' no detectable odor

NOTES: Terminated boring at 6'. Contaminant odor detected from .5' to about 5' in boring. No water or fluid encountered. Borehole backfilled and tamped with auger tool.

BORING 2

DATE DRILLED: April 22, 1985

EQUIPMENT USED: 6"-Diameter Hand Auger



4" Asphaltic Concrete, moderately firm to hard, surface is soft and decomposed

FILL - Gravel base, Silty Sand, fine to coarse Sand with gravel, moderate amounts of Silt and Clay, yellowish-orange

FILL - CLAYEY SILT - soft, mottled, pieces of concrete and brick, dark greenish-grey
At 1.4' blue-purple sheen on soil, very strong odor, soil is greyish-brown
At 2' no sheen

CLAYEY SILT - moderate amounts of fine Sand, few pebbles, slightly damp, dark yellowish-brown, thin caliche seams
Moderate odor
At 6' no detectable odor

NOTES: Terminated boring at 6'. Contaminant odor detected from .5' to about 5'. No water or fluid encountered. Backfilled borehole and tamped with auger tool.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

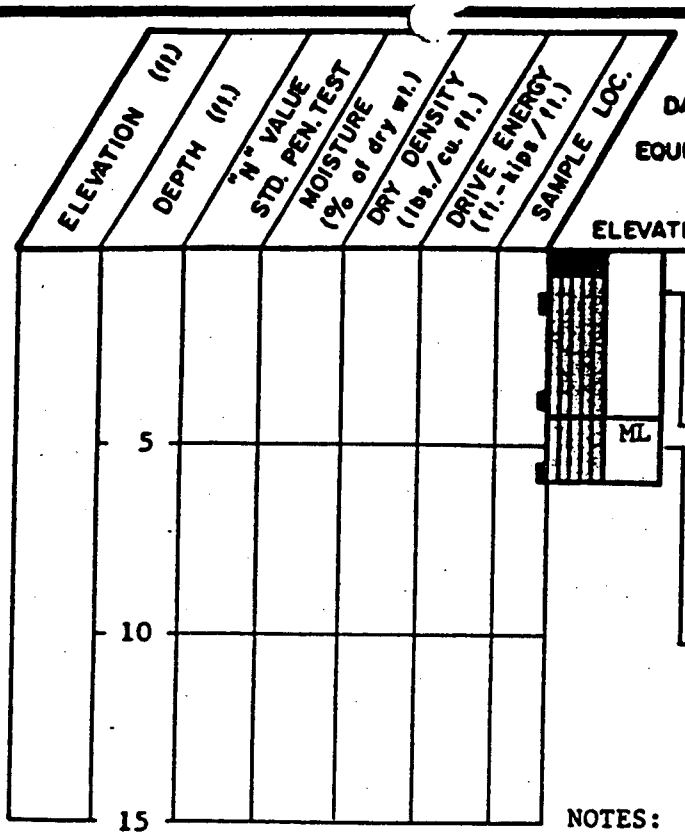
LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 3

DATE DRILLED: April 22, 1985

EQUIPMENT USED: 6"-Diameter Hand Auger



3.5" Asphaltic Concrete, firm to hard, surface is loose

FILL - Gravel base, Silty Sand; fine to coarse Sand, moderate amounts of Silt, some Clay and gravel, orangish-brown

FILL - SILTY CLAY to CLAYEY SILT - dark bluish-brown to dark grey
At 1' small pieces of concrete and brick, slightly damp to damp, firm, dark greyish-brown, moderate odor
At 2' slightly less firm, less debris. slight odor

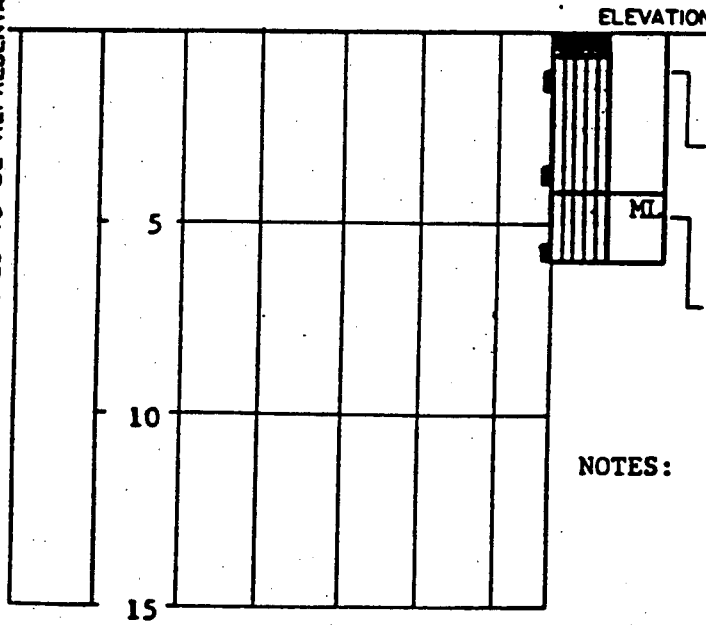
CLAYEY SILT - moderate amounts of fine Sand, few pebbles and gravel, moderately firm, yellowish-brown, thin caliche seams
No detectable odor

NOTES: End of boring at 6'. Contaminant odor detected from .5' to about 3'. No water or fluid encountered. Borehole backfilled and tamped with auger tool.

BORING 4

DATE DRILLED: April 22, 1985

EQUIPMENT USED: 6"-Diameter Hand Auger



4" Asphaltic Concrete, hard

FILL - Gravel base, Silty Sand, fine to coarse Sand, moderate some Sand, Clay and gravel

FILL - SILTY CLAY and CLAYEY SILT - small pieces of brick, few pebbles, dark bluish-grey to greyish-brown
At 2' no apparent debris, some very fine Sand, no detectable odor

CLAYEY SILT - some very fine Sand, few small pebbles, moderately firm, moderately damp, thin caliche seams, no detectable odor

NOTES: Terminated boring at 6'. No detectable odor from borehole or materials. No water or fluid encountered. Backfilled borehole and tamped with auger tool.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

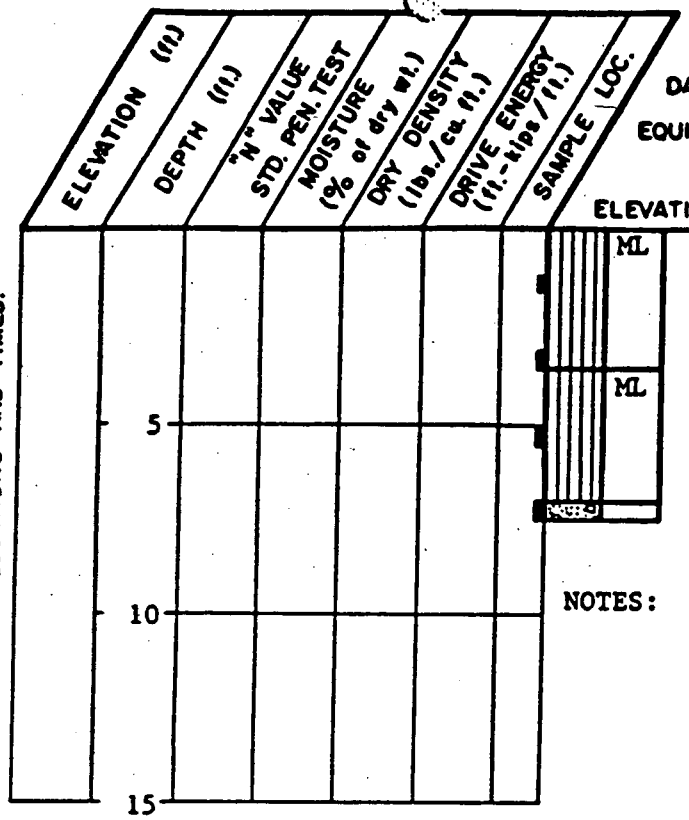
LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

BORING 5

DATE DRILLED: May 30, 1985

EQUIPMENT USED: 6"-Diameter Hand Auger



ML — FILL - CLAYEY SILT - porous, damp, dark grey to black

ML — CLAYEY SILT - damp, brown to yellowish-brown

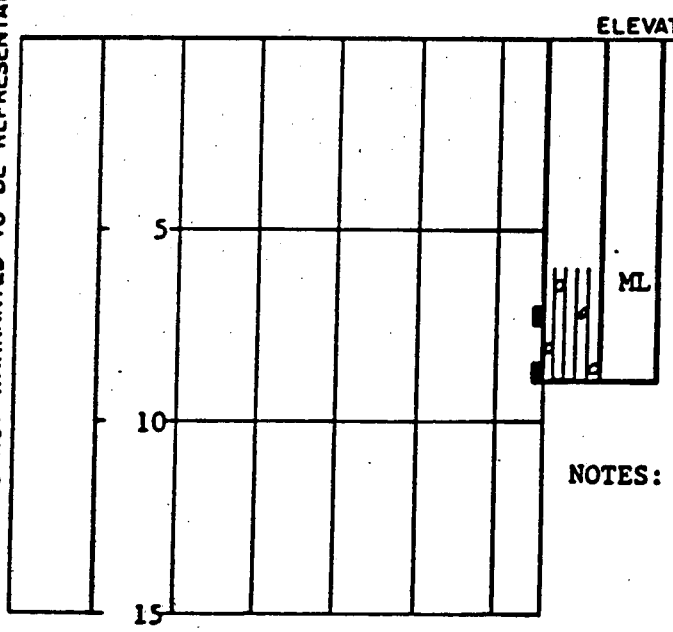
SAND - poorly graded, medium grained with 5% to 10% gravel, damp

NOTES: Terminated boring at 7.5' due to difficult drilling. No water or fluid encountered. Boring backfilled and tamped with auger.

BORING 1a

DATE DRILLED:

EQUIPMENT USED: 6"-Diameter Hand Auger



See Log of Boring 1 for 0' to 6' (backfilled)

ML — CLAYEY SILT - few gravel, damp, yellowish-brown
5% to 10% gravel upto 4" diameter
Very firm to hard
No detectable odor

NOTES: Terminated boring at 9' due to difficult drilling. No water or fluid encountered. Boring backfilled and tamped with auger tool.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

LOG OF BORING

LeROY CRANDALL AND ASSOCIATES

ANALYTICAL RESEARCH LABORATORIES, INC.

160 TAYLOR STREET, P.O. BOX 2360, MONROVIA, CALIFORNIA 91016 • (818) 357-3247

Lab/Shippe. Log Number: 55137

Client	Work Order	P. O. Number
Omega Chemical Corporation	5003-01	013191

Material/Sample Identity	Rec'd	Due
6 Soil Samples	5-30-85	6-13-85

Requested By	Sample Disposition
Name: Mr. Steve Simpson Phone: (213) 698-0991	Expendable

Report/Ship To:
Mr. Steve Simpson
Omega Chemical Corporation
12504 E. Whittier Boulevard
Whittier, CA 90602

Nature of Work and Information Desired

Determine 1,1,1-Trichloroethane, Methylene Chloride, Trichloroethylene, and Tetrachloroethylene Content of 6 Soil Samples

Summary of Laboratory Report

Q.C. Level: 2

The six soils were extracted and analyzed per EPA Method 3550 for 4 selected halogenated solvents using gas chromatography. Boring site 1 contained a small amount of tetrachloroethylene at the 7 foot level, but at the 8.5 foot level, all 4 of the compounds of interest were less than 0.1 ppm.

Boring site 5 contained the 4 compounds of interest in addition to 1,2-dichloroethane (25. ppm) at the 1 foot level. This was the only sample in which this compound was found. From 3 to 7 feet, there was < 0.10 ppm of 3 of the compounds of interest. Tetrachloroethylene was found in decreasing concentrations from approximately 0.7 ppm at 3 feet to 0.2 ppm at 7 feet. Please refer to the attached table for identifications and quantitations.

RECEIVED
LeRoy Crandall and Associates
JUN 17 1985
File: E-85127
BV ☑
MKT ☑

Analyst	Book - Page	Approved By	Date
MKR	355-15		12 June 1985

Omega Chemical Corporation

Lab Log No. 55137
12 June 1985

Table 1

Soil Analysis by GC

Sample	Methylene Chloride, ppm	1,1,1-Trichloro-ethane, ppm	Trichloro-ethylene, ppm	Tetrachloro-ethylene, ppm	1.2-Dichloro-ethane, ppm
Boring 1 - 7 Ft.	< 0.10	< 0.10	< 0.10	0.18	< 0.10
Boring 1 - 8.5 Ft.	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Boring 5 - 1 Ft.	4.49	848.	358.	2064.	25.
Boring 5 - 3 Ft.	< 0.10	< 0.10	< 0.10	0.69	< 0.10
Boring 5 - 5 Ft.	< 0.10	< 0.10	< 0.10	0.29	< 0.10
Boring 5 - 7 Ft.	< 0.10	< 0.10	< 0.10	0.19	< 0.10

The detection limit is approximately 0.10 ppm for these analyses.

ANALYTICAL RESEARCH LABORATORIES, INC.
160 TAYLOR STREET, P.O. BOX 2360, MONROVIA, CALIFORNIA 91016 • (818) 357-3247

Lab/Shipper Log Number: 45131

Client	Work Order	P. O. Number
Omega Chemical Company	6849-01	Verb-S. Simpson

Material/Sample Identity	Rec'd	Due
12 Soil Samples (4 Boring Sites)	4-25-85	5-9-85

Requested By	Sample Disposition
Name: Mr. Steve Simpson Phone: (213) 698-0991	Expendable

Report/Ship To:
Mr. Steve Simpson
Omega Chemical Company
12504 E. Whittier Boulevard
Whittier, CA 90602

Nature of Work and Information Desired

Determine Chlorinated Hydrocarbon Speciation and Quantitation of 12 Soils

Summary of Laboratory Report — Q.C. Level: 2

The 12 soil samples were extracted with hexane according to EPA Method 3550 and analyzed for halogenated hydrocarbons by gas chromatography according to EPA 8120.

The 3 soils from Boring 1 and 1 soil from Boring 2 were the only samples with detected hydrocarbons from the 12 soils submitted. Please refer to the attached table for the sample results.

RECEIVED
LeRoy Crandall and Associates
MAY 20 1985
File: E-
Geo. ☐ B.C. ☑
Met. ☐ ☐

Analyst	Book - Page	Approved By	Date
MKR	345-99	[signature]	16 May 1985

ANALYTICAL RESEARCH LABORATORIES, INC.

160 TAYLOR STREET, P.O. BOX 2360, MONROVIA, CALIFORNIA 91016 • (818) 357-3247

Omega Chemical Company

Lab Log No. 45131
16 May 1985

Table 1

Soil Analysis by GC

Sample	1,1,1-Trichloro-ethane, ppm	Methylene chloride ppm	Trichloro-ethylene, ppm	Tetrachloro-ethylene, ppm
Boring 1 - 1 Ft.	< 0.10	2.89	< 0.10	30.1
Boring 1 - 1.25 Ft.	< 0.10	1000.	< 0.10	1201.
Boring 1 - 3.5 Ft.	< 0.10	9.73	< 0.10	89.0
Boring 2 - 1 Ft.	75.1	8.28	29.4	9.55
Boring 2 - 3.5 to 4 Ft.	< 0.10	< 0.10	< 0.10	< 0.10
Boring 2 - 5.5 to 6 Ft.	< 0.10	< 0.10	< 0.10	< 0.10
Boring 3 - 1 Ft.	< 0.10	< 0.10	< 0.10	< 0.10
Boring 3 - 3.5 Ft.	< 0.10	< 0.10	< 0.10	< 0.10
Boring 3 - 5.5 to 6 Ft.	< 0.10	< 0.10	< 0.10	< 0.10
Boring 4 - 1 Ft.	< 0.10	< 0.10	< 0.10	< 0.10
Boring 4 - 3.5 Ft.	< 0.10	< 0.10	< 0.10	< 0.10
Boring 4 - 5.5 to 6 Ft.	< 0.10	< 0.10	< 0.10	< 0.10

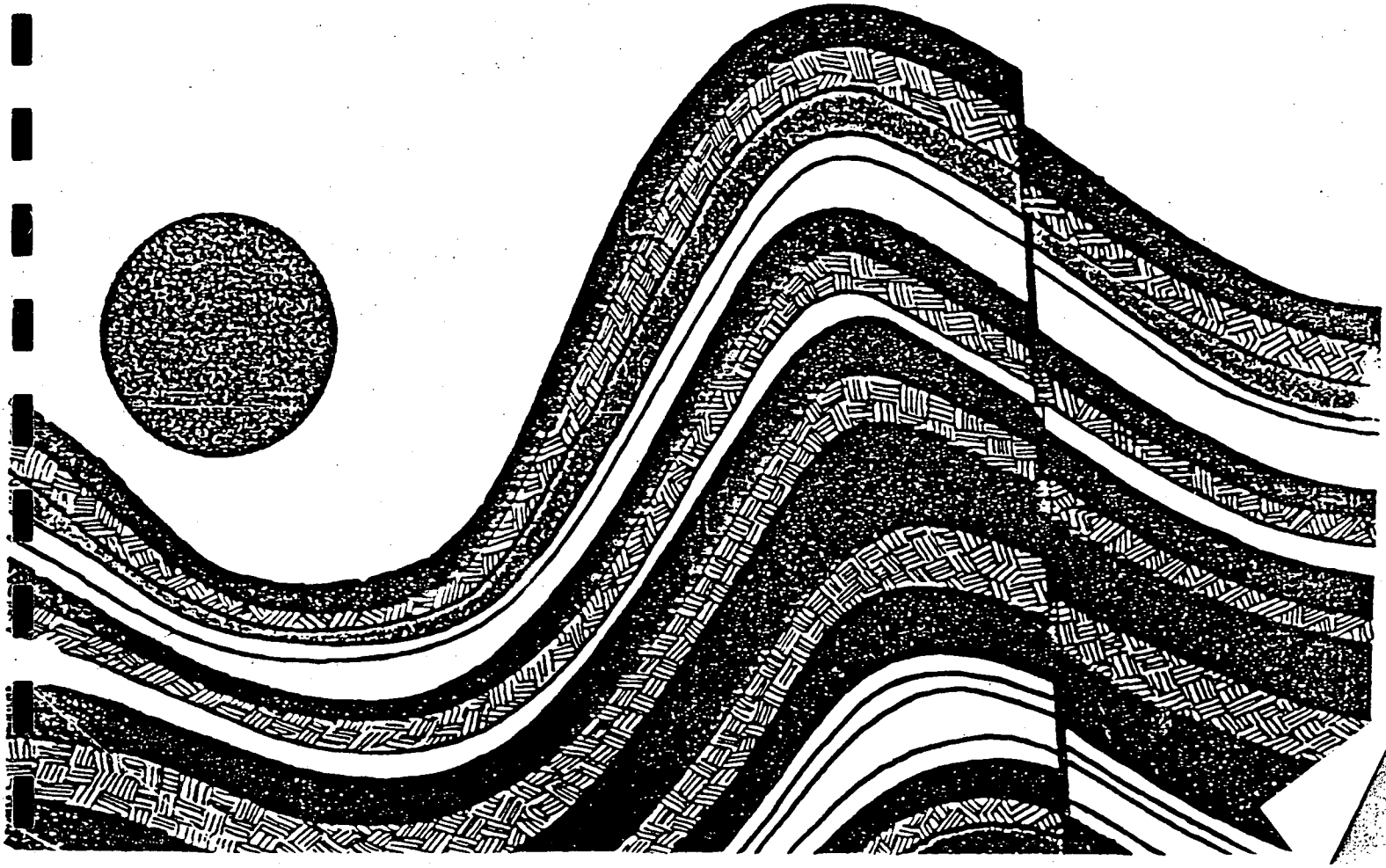
The detection limit for this analysis is approximately 0.10 ppm

Appendix B

Leighton and Associates Investigation Report

Leighton and Associates

L&A



LEIGHTON and ASSOCIATES
INCORPORATED
•SOIL ENGINEERING •GEOLOGY •GEOPHYSICS •GROUND WATER •MATERIALS TESTING •HAZARDOUS WASTE ASSESSMENT

August 26, 1987

Project No. 40870825-02

TO: Darling, Wold and Agee
P. O. Box 348
Whittier, California 90608

ATTENTION: Messrs. Paul E. Hendricks and Wayne L. Harvey
Trustees

12504

SUBJECT: Results of Laboratory Analysis Performed on Soil Samples Collected After the Removal of an Underground Tank, Located on the Fred R. Rippy Trust Property, 12512 East Whittier Boulevard, Whittier, California

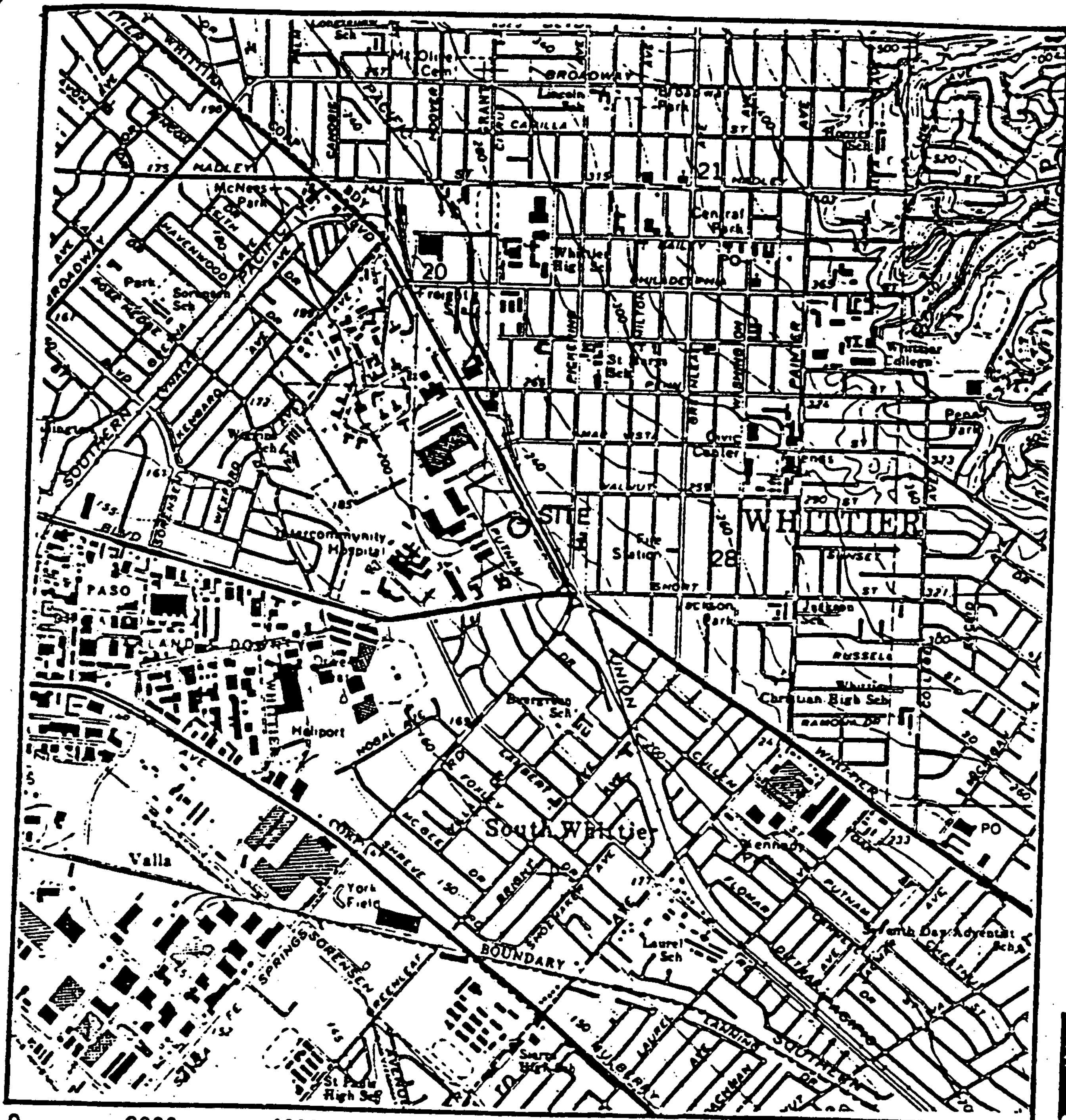
Introduction

In accordance with your request, Leighton and Associates, Inc. has conducted soil sampling beneath one removed underground storage tank at the subject site. The purpose of this investigation was to collect and analyze soil samples from beneath the underground tank, as required by the County of Los Angeles Department of Public Works (LADPW). This report presents the results of our investigation.

Accompanying Map, Illustration, and Appendices

40870825-02

INDEX MAP



0 2000 4000
scale feet

INDEX MAP

OF

RIPPY TRUST

(OMEGA RECOVERY SYSTEMS)

12504 East Whittier Boulevard

(Subject Site Shown in Yellow)

BASE MAP: USGS Whittier 7-1/2 Minute Quadrangle

LEIGHTON and ASSOCIATES

Scope of Work

The following scope of work was proposed and implemented:

- Observe and record tank removal activities.
- Collect and visually describe soil types beneath the one removed underground storage tank (unknown contents).
- Laboratory analysis by a Department of Health Services certified laboratory.
- Preparation of a letter report containing results of laboratory analysis and summary of findings.

Field Investigation

On August 8, 1987, one 500-gallon underground tank was unearthed and removed from the subject site. The bottom depth of the tank was approximately eight feet below grade. No representative from the LADPW was present when the tank was removed. Inspectors from the Los Angeles County Fire Department did observe the tank removal process. A Leighton and Associates, Inc. geologist visually observed the excavation. A strong solvent odor was noticed by personnel onsite. The Photoionization detector (a device used to measure the presence of volatile organic compounds) detected no measurable volatile organic vapors during the tank removal operations.

During removal of the concrete pad and tank overburden, the roof of the west end of the tank collapsed, allowing a small amount of soil to spill into the tank. A plywood board was placed over the hole to prevent additional soil from entering and possibly being contaminated by the contents of the tank. Close inspection of the exhumed tank revealed that it was badly corroded in the area where the tank had collapsed.

Upon removal of the tank, approximately 50 gallons of residual liquid was found in the bottom of the tank. A preliminary chemical scan of the residual fluid was performed onsite by a chemist from Omega Recovery Systems (the present tenant). The preliminary test results indicated that the fluid was primarily water with small amounts of various hydrocarbons and solvents.

The excavated soils were separated onsite into two separate stockpiles: one pile represented the soils that were removed from the excavation, and the other pile consisted of the soils that had spilled into the tank.

Two soil samples (E-1 and E-2) were collected at 10 and 12 feet below grade (two and four feet below the base of the tank). Three additional soil samples were collected from the stockpiled soils (see Site Map, Figure 1). Sample SP-1 was taken from soils obtained from inside the tank, and SP-2A and SP-2B were collected from excavated soils. No field detectable signs of contamination (staining or odors) were observed in the soil samples from beneath the tank or in the excavation stockpiled soils. The three stockpile soil samples were collected from a 6-inch depth at three points within the soil pile. All the

soil samples were collected in accordance with EPA Standard Methods, as outlined in Appendix A.

The soils were analyzed by Associated Laboratories, a Department of Health Services' certified laboratory. EPA Test Methods 8010 (purgeable halogenated volatile organics), modified 8015 (purgeable non-halogenated volatile organics), 8020 (aromatic volatile organics), and 8240 (volatile organics) were performed on the two soil samples collected from beneath the tank (E-1 and E-2). Sample SP-1, representing the soil that had spilled into the tank, was analyzed by EPA Test Method 8240. The other samples collected from the excavation soil stockpile were not analyzed (see Appendix B for laboratory results and chain-of-custody records).

Results

The soils that were encountered within the tank excavation were medium to dark brown, moderately sorted, medium density, silts and sandy silts.

Relatively low to moderate levels of petroleum hydrocarbons and solvent contamination were detected in the soils beneath the subject tank. In nearly all cases, the detected contaminants appear to be increasing in concentration with depth. The results of the petroleum hydrocarbon analyses show the concentration ranging from 11 ppm at 10 feet below grade (BG) to 300 ppm at 12 feet BG. Benzene, Toluene, Ethyl Benzene, and Xylene were not detected at 10 feet BG, but were detected in relatively low concentrations (.3 to .4 ppm Toluene, Ethyl Benzene, Xylenes; Benzene was not detected) at 12 feet BG. The four purgeable organic compounds that were detected by EPA Test Method 8010 also showed increasing concentrations with depth, as did 9 of the 11 compounds detected in the EPA Test Method 8240 scan (see laboratory results in Appendix B).

The small stockpile, constituting the soils that had spilled into the tank while it was being exhumed, contained detectable amounts of Methylene chloride (26 ppb), Acetone (236 ppb), 1,1,2-Trichloroethane (162 ppb), Tetrachloroethylene (410 ppb), and O-Xylene (9 ppb).

Summary of Findings and Conclusions

Based on the results of our investigation, we present the following findings and conclusions:

1. Laboratory analysis of soils sampled from beneath the tank indicates the presence of petroleum hydrocarbons and solvents in the soils.

2. Of the 13 potentially hazardous compounds that were identified in the soils during this investigation, all but three appear to be increasing in concentration with depth.

3. Due to the similarities in the chemical makeup of both the fluid found in the tank and the contaminants found in the soil, it would appear that the tank may be a contributory source for the contamination. However, since

these same chemicals can be found elsewhere on the site, there is insufficient evidence at this time to preclude the possibility of other contamination sources.

4. The lateral and vertical extent of the soil contamination, and the impact (if any) to local ground water resources are unknown at this time and should be examined.

If you have any questions regarding our report, please do not hesitate to contact Mr. David Lloyd at this office. We appreciate this opportunity to be of service.

Respectfully submitted,

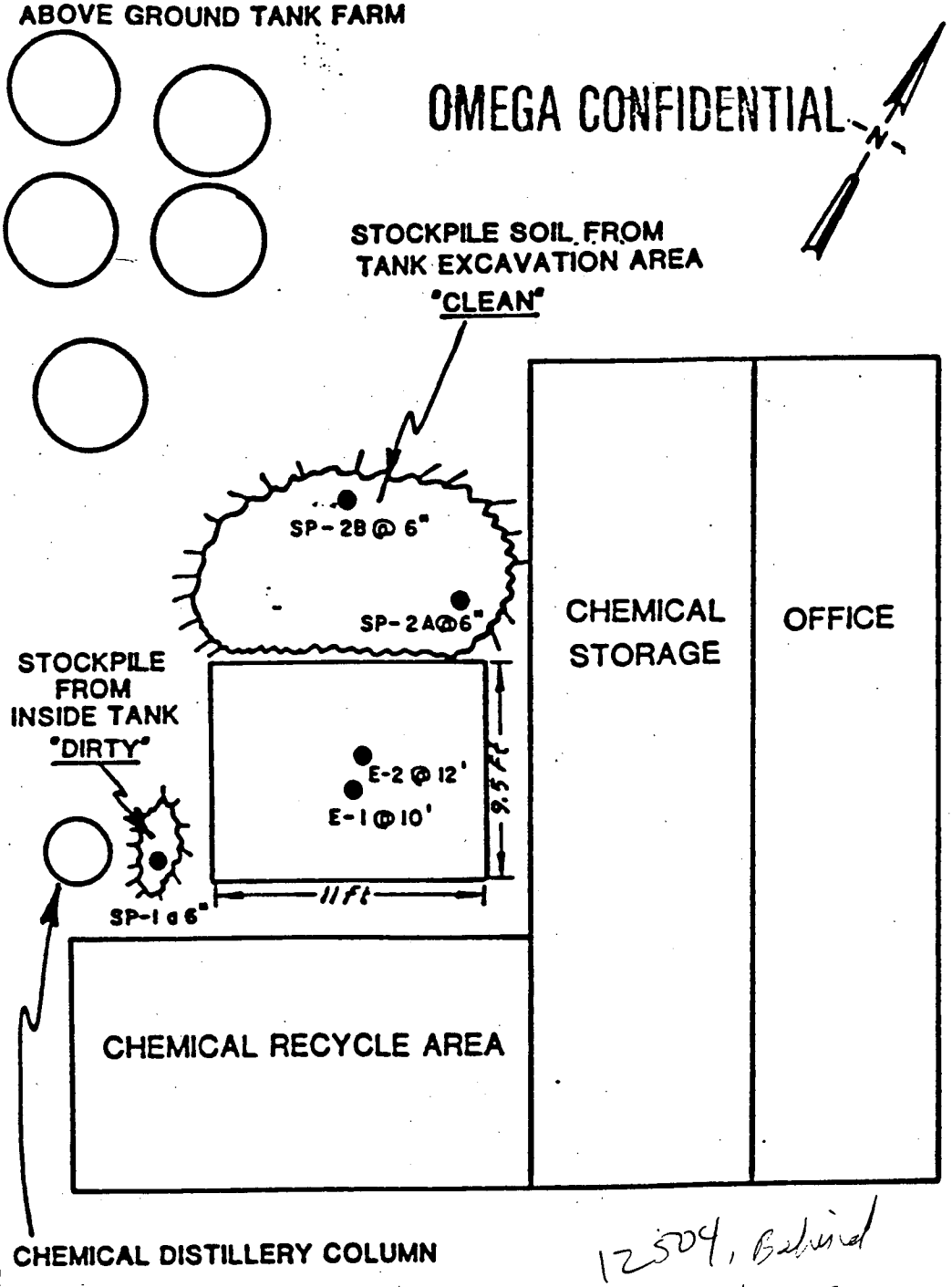
LEIGHTON AND ASSOCIATES, INC.

David Lloyd
Project Geologist

Thomas E. Mills
Director, Environmental Services

TMD/DL/TM/rsh/ls

Distribution: (3) Addressee



12504, Behind Warehouse.

(NOT TO SCALE)

FIGURE 1

RIPPY TRUST

12504 E. WHITTIER BLVD. WHITTIER, CA

Proj: 40870825-02	Scale: None	Date: 8/26/87
Engineer/Geologist: GK	Drafting By: nh	

LEIGHTON and ASSOCIATES, INC.

APPENDIX A

APPENDIX A

SOIL SAMPLING AND PROCEDURES

1. Soils encountered during excavating operations were visually classified by a Leighton and Associates, Inc. geologist.

2. Soils were collected from grab samples from the bucket of a backhoe. Soils were placed in a brass ring (2.5-inch O.D., 3 inches in length).

3. Soil samples were sealed with Teflon tape, PVC caps, and duct tape. Samples were also labeled, placed on ice, and manifested on a Chain-of-Custody record prior to being transported to Associated Laboratories, a California DOHS-certified laboratory in Orange County on May 14, 1987.

APPENDIX B

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900

OMEGA CONFIDENTIAL

CLIENT
Leighton & Associates (1719)
667 Brea Canyon Road
Suite 31
Walnut, CA 91789
Attn: David Lloyd

LAB NO. F36909-2
REPORTED 08/17/87

SAMPLE Soil
RECEIVED 08/07/87

IDENTIFICATION Project # 40870825-02, Rippiy Trust
Rippiy Trust, Whittier, CA

BASED ON SAMPLE As Submitted

Purgeable Organics EPA 8240:	E-1 @ 10'	E-2 @ 12'	SP-1 @ 6'
Methylene chloride	----	1,700 µg/kg	26 µg/kg
Acetone	46 µg/kg	13,800 µg/kg	236 µg/kg
1,1-Dichloroethane	----	156 µg/kg	----
1,1,1-Trichloroethane	----	3,500 µg/kg	----
1,1,2-Trichloroethane	----	166 µg/kg	162 µg/kg
4-Methyl-2-pentanone	6 µg/kg	----	----
Tetrachloroethylene	200 µg/kg	----	410 µg/kg
Tetrachloroethene	----	3,000 µg/kg	----
Toluene	----	295 µg/kg	----
Ethylbenzene	----	176 µg/kg	----
o-Xylene	----	490 µg/kg	9 µg/kg

All other compounds were None Detected. See attached list.

ASSOCIATED LABORATORIES

Edward S. Behare, Ph.D.

ESB/ql

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING
Chemical •
Microbiological •
Environmental •

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900

OMEGA CONFIDENTIAL

CLIENT
Leighton & Associates (1719)
667 Brea Canyon Road
Suite 31
Walnut, CA 91789
Attn: David Lloyd

LAB NO F36909-1
REPORTED 08/17/87

SAMPLE Soil
RECEIVED 08/07/87

IDENTIFICATION Project # 40870825-02, Rippiy Trust
Rippiy Trust, Whittier, CA
As Submitted

BASED ON SAMPLE

	E-1 @ 10'	E-2 @ 12'
Total Hydrocarbons (8015) (mg/kg)	11	300
Benzene (mg/kg)	ND< 0.05	ND< 0.05
Toluene (mg/kg)	ND< 0.05	0.4
Ethyl Benzene (mg/kg)	ND< 0.1	0.3
Total Xylene (8020) (mg/kg)	ND< 0.1	0.4

EPA Method 8010	E-1 @ 10'	E-2 @ 12'
1,1,1-Trichloroethane	None Detected	4.0 mg/kg
Tetrachloroethene	0.24 mg/kg	2.7 mg/kg
Methylene chloride	None Detected	1.3 mg/kg
1,1-Dichloroethane	None Detected	0.12 mg/kg

All other compounds were None Detected. See attached list.

ASSOCIATED LABORATORIES

Edward S. Behare, Ph.D.

ESB/ql

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING
Chemical •
Microbiological •
Environmental •

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900

OMEGA CONFIDENTIAL

CLIENT
Leighton & Associates (1719)
667 Brea Canyon Road
Suite 31
Walnut, CA 91789
Attn: David Lloyd

LAB NO F36909-3
REPORTED 08/17/87
RECEIVED 08/07/87

SAMPLE Soil

IDENTIFICATION Project # 40870825-02, Rippiy Trust
Rippiy Trust, Whittier, CA
As Submitted

BASED ON SAMPLE

	E-1 @ 10'
Total Hydrocarbons (8015)	11 mg/kg

ASSOCIATED LABORATORIES

Edward S. Behare, Ph.D.

ESB/ql

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

Client: Leighton & Associates
Lab No.: F36909
Date: August 17, 1987

OMEGA CONFIDENTIAL

PURGEABLE ORGANICS EPA METHOD 8240:	LIMITS OF DETECTION
Chloromethane	ND< 30.0 µg/kg
Bromomethane	ND< 30.0 µg/kg
Vinyl Chloride	ND< 30.0 µg/kg
Chloroethane	ND< 30.0 µg/kg
Methylene Chloride	ND< 50.0 µg/kg
Acetone	ND< 50.0 µg/kg
Acrolein	ND< 50.0 µg/kg
Acrylonitrile	ND< 50.0 µg/kg
Carbon Disulfide	ND< 5.0 µg/kg
1,1-Dichloroethene	ND< 5.0 µg/kg
1,1-Dichloroethane	ND< 5.0 µg/kg
Trans-1,2-Dichloroethene	ND< 5.0 µg/kg
Tetrahydrofuran	ND< 5.0 µg/kg
Trichlorofluoromethane	ND< 5.0 µg/kg
Freon-TF	ND< 5.0 µg/kg
Ethylene Dibromide	ND< 5.0 µg/kg
1,4-Dioxane	ND< 5.0 µg/kg
1,2-Dibromo-3-Chloropropane	ND< 5.0 µg/kg
Chloroform	ND< 5.0 µg/kg
1,2-Dichloroethane	ND< 5.0 µg/kg
2-Butanone	ND< 50.0 µg/kg
1,1,1-Trichloroethane	ND< 5.0 µg/kg
Carbon Tetrachloride	ND< 5.0 µg/kg
Vinyl Acetate	ND< 30.0 µg/kg
Bromodichloromethane	ND< 5.0 µg/kg
1,1,2,2-Tetrachloroethane	ND< 5.0 µg/kg
1,2-Dichloropropane	ND< 5.0 µg/kg
Trans-1,3-Dichloropropene	ND< 5.0 µg/kg
Trichloroethene	ND< 5.0 µg/kg
Chlorodibromomethane	ND< 5.0 µg/kg
1,1,2-Trichloroethane	ND< 5.0 µg/kg
Benzene	ND< 5.0 µg/kg
Cis-1,3-Dichloropropene	ND< 5.0 µg/kg
2-Chloroethylvinyl Ether	ND< 50.0 µg/kg
Bromoform	ND< 5.0 µg/kg
2-Hexanone	ND< 30.0 µg/kg
4-Methyl-2-Pentanone	ND< 30.0 µg/kg
Tetrachloroethene	ND< 5.0 µg/kg
Toluene	ND< 5.0 µg/kg
Chlorobenzene	ND< 5.0 µg/kg
Ethylbenzene	ND< 5.0 µg/kg
Styrene	ND< 5.0 µg/kg
Total Xylenes	ND< 5.0 µg/kg
M-Chlorotoluene	ND< 5.0 µg/kg
1,3-Dichlorobenzene	ND< 5.0 µg/kg
1,4-Dichlorobenzene	ND< 5.0 µg/kg
1,2-Dichlorobenzene	ND< 5.0 µg/kg

Client: Leighton & Associates
Lab No.: F36909
Date: August 17, 1987

OMEGA CONFIDENTIAL

PURGEABLE ORGANICS - EPA METHOD 8010

Chloromethane	ND <10 µg/kg
Bromomethane	ND <10 µg/kg
Dichlorodifluoromethane	ND <10 µg/kg
Vinyl chloride	ND <10 µg/kg
Chloroethane	ND <10 µg/kg
Methylene chloride	ND <10 µg/kg
Trichlorofluoromethane	ND <10 µg/kg
1,1-Dichloroethene	ND <10 µg/kg
1,1-Dichloroethane	ND <10 µg/kg
trans-1,2-Dichloroethene	ND <10 µg/kg
Chloroform	ND <10 µg/kg
1,2-Dichloroethane	ND <10 µg/kg
1,1,1-Trichloroethane	ND <10 µg/kg
Carbon tetrachloride	ND <10 µg/kg
Bromodichloromethane	ND <10 µg/kg
1,2-Dichloropropane	ND <10 µg/kg
trans-1,3-Dichloropropene	ND <10 µg/kg
Trichloroethene	ND <10 µg/kg
Dibromochloromethane	ND <10 µg/kg
1,1,2-Trichloroethane	ND <10 µg/kg
cis-1,3-Dichloropropene	ND <10 µg/kg
2-Chloroethylvinyl ether	ND <10 µg/kg
Bromoform	ND <10 µg/kg
1,1,2,2-Tetrachloroethane	ND <10 µg/kg
Tetrachloroethene	ND <10 µg/kg
Chlorobenzene	ND <10 µg/kg
1,3-Dichlorobenzene	ND <10 µg/kg
1,2-Dichlorobenzene	ND <10 µg/kg
1,4-Dichlorobenzene	ND <10 µg/kg

Project No.	Client and Site Location
10010825-01	Rippiy/Trust Whittier, CA

Samplers (Signature): Stephen Kwok

Sample Number	Date	Time	Depth Below Grade (ft)	Sample Type	Suspect Contamination	No. of Containers
E-1	8/6/87		10'	Soil	Petroleum hydro-carbons, TCE, Aromatic Hydro-carbons, Chlorinated HC's, Perchloroethene, BTX, Ketone,	1
E-2	↓		12'	↓		↓
SP-1			6"			
SP-2A			↓			
SP-2B	↓		↓	↓		↓

EPA Test Method No.: Total Petroleum Hydrocarbons Modified 8015; Volatile Organics by 8010/8020

Call & Send Results to:
Leighton & Associates, Inc.
667 Brea Cyn Rd. Ste 21
Walnut, CA 91789
Attention: David Lloyd
Phone No (714) 598-2856

REMARKS: HOLD all samples for testing until notified by David Lloyd

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Sample Integrity:
Samples Intact: Yes X No ____
Samples Properly Cooled: Yes X No ____
Samples Accepted: Yes X No ____
If not, why: ____

Samples Placed in Lab Refrigerator
Yes X No ____ L&A Rep. Initials SK

Relinquished by:	Date / Time	Received by:
Stephen Kwok	8/6/87 3:30 pm	
[signature]	8/6/87 3:45	[signature]
	8/6/87 3:30 pm	Received for Lab by: [signature]

Leighton and Associates, Inc.

Laboratory Name: Associated Laboratories
Certification No.: 154

Appendix C

ERT, Inc. Investigation Report

Project DRAFT

Draft (less AH.I) delivered to Ashby only

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February 2, 1988
File: G-697

Michael P. Ashby, Esq.
Thomson & Nelson
1511 East Whittier Boulevard, Suite 400
Whittier, California 90603

Dear Mike;

Re: Report on Soil Vapor Survey of Fred R. Rippy Trust Real Property Located at 12504 East Whittier Boulevard, Whittier, California.

In accordance with your request, ERT has completed a soil vapor survey at the above referenced site. The following paragraphs outline the field work conducted, our findings, initial conclusions, and recommendations for further investigations.

INTRODUCTION

The subject site is presently a solvent recovery plant that processes chemical waste material, including wastes classified as hazardous. Storage of waste solvents and recovered solvents is done in either 55 gallons drums (stacked throughout the site) or in above ground tanks in the western corner of the site.

SUMMARY OF FIELD ACTIVITIES

On January 21, 1988, ERT personnel were on-site to conduct a soil vapor survey. A total of eighteen (18) sample points were analyzed for soil vapor content on a portable gas chromatograph (GC). The locations of these sample points are shown on the Site Plan, Figure 1 . Details of the soil vapor survey are presented in Attachment I. An additional four sample points were not analyzed due to interruptions in the sampling program caused by nearby plant operations.

FINDINGS

Significant levels of hydrocarbon vapors were detected in most of the samples analyzed. The following table (Table 1) summarizes these results. Copies of the actual chromatograms are enclosed in Attachment II.

TABLE 1
Summary of Soil Vapor Survey Results
January 21, 1988
Chromatographic Readings (Vs)

Location	Total Readings	Equipment Air Blank	Net Reading	Relative * Level
S1	4.19	0.00	4.19	Minor
S2	5.48	0.17	5.31	Minor
S3	5.01	0.11	4.90	Minor
S4	66.58	1.19	65.39	Moderate
S5	83.19	1.80	81.39	Moderate
S6	98.87	0.62	196.49	Substantial
S7	359.05	3.34	711.42	Substantial
S8	27.60	4.13	46.93	Moderate
S9	12.75	3.59	18.32	Moderate
S10	469.60	5.32	928.56	Substantial
S11	80.70	12.52	136.36	Substantial
S12	106.90	10.45	192.90	Substantial
S13	16.50	5.41	22.18	Moderate
S14	148.75	10.51	276.48	Substantial
S15	1600.00	21.96	3156.08	Very Substantial
S16	707.32	10.66	3483.29	Very Substantial
S17	Unable to Sample			
S18	Unable to Sample			
S19	Unable to Sample			
S20	Unable to Sample			
S21	35.79	24.46	56.65	Moderate
S22	13.29	12.91	1.90	Minor

UNITS ?

what depth?

* Based on interpretations of chromatograms. The following levels are a general guideline:

0.0 < 1.0	Background or Trace Levels
1.0 - 10.0	Minor Levels
10.0 - 100.0	Moderate Levels
100.0 - 1000.0	Substantial Levels
>1000.0	Very Substantial Levels

CONCLUSIONS

Based on the findings presented above, it appears that significant levels of hydrocarbon vapors exist in the soils beneath this site. This condition appears to exist under most of the site, with the exception of the northeastern side, along Whittier Boulevard. Because of the prevalence of significant levels of hydrocarbon vapors, the data is inconclusive as to the source of the hydrocarbons. However, it does appear to be from on-site operations, as opposed to off site.

RECOMMENDATIONS

ERT recommends additional field investigations be conducted on this site to better define subsurface conditions. These investigations should include collection of soil samples for analysis to quantitatively identify hydrocarbons present and define their vertical and lateral extents. If it is determined that significant levels of hydrocarbons extend to ground water, monitoring wells should be installed and ground water samples collected and analyzed.

ERT appreciates the opportunity to provide technical services to Thomson & Nelson. Please call us if you have any questions regarding this project.

Sincerely,

ERT, Inc.

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Charles Keller
Project Hydrogeologist

cc: Mr. Paul Hendricks, Fred R. Rippy Trust
Mr. Wayne Harvey, Fred R. Rippy Trust

Attachments

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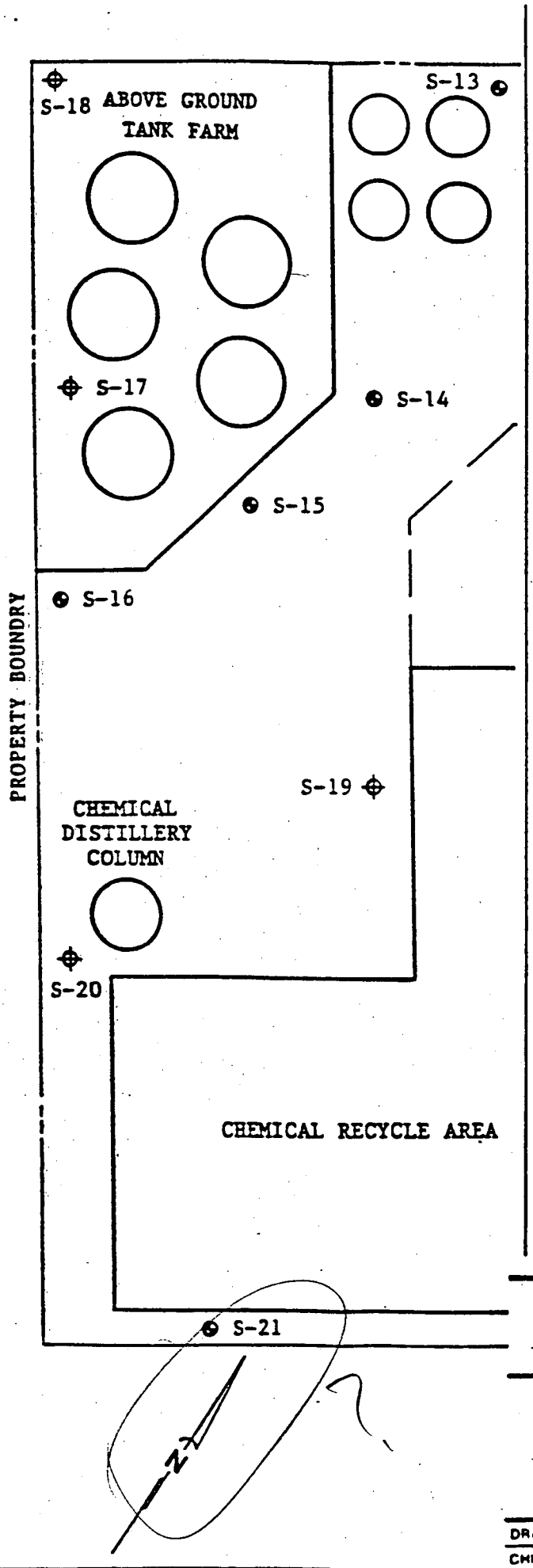
ATTACHMENT I



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EXPLANATION

- LOCATION OF SAMPLING POINT
- LOCATION OF SAMPLING POINT NOT ANALYZED

SCALE (APPROX.)

0 5 10 FEET

ERT

A RESOURCE ENGINEERING COMPANY

SITE PLAN

SOIL VAPOR SAMPLING POINTS

FIGURE 1

DRAWN BY:	DATE:	PROJECT NO.:
CHK'D BY:	REVISED:	DWG.NO.:

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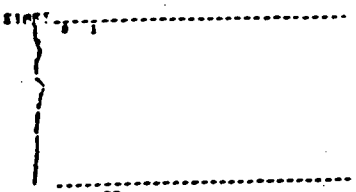
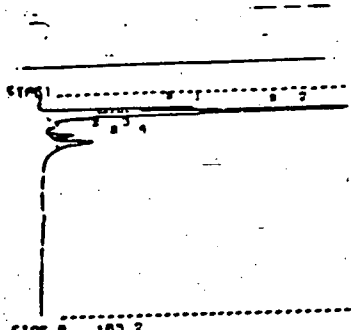
ATTACHMENT II



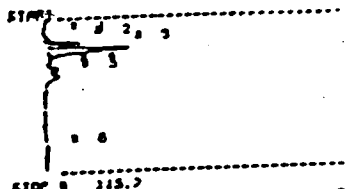
STOP 6 123.1
SAMPLE RUN JAN 21 1988 13:34
ANALYSIS # 1 OMEGA
TEMPERATURE 20 51
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/???
UNKNOWN	1	15.8	3.3 pVS



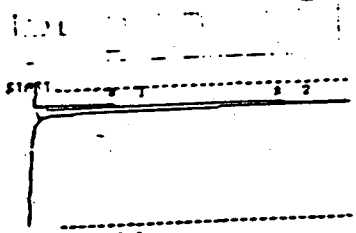
STOP 0 183.2
SAMPLE RUN JAN 21 1988 13:48
ANALYSIS # 6 OMEGA
TEMPERATURE 25 57
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/???
UNKNOWN	1	15.8	635.2 pVS
UNKNOWN	2	18.8	1.2 VS
UNKNOWN	3	22.8	182.3 pVS
UNKNOWN	4	29.4	364.3 pVS



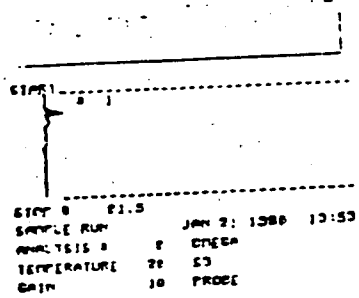
STOP 0 115.2
SAMPLE RUN JAN 21 1988 14: 3
ANALYSIS # 17 OMEGA
TEMPERATURE 30 59
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/???
UNKNOWN	1	16.8	18.3 pVS
UNKNOWN	2	19.6	733.3 pVS
UNKNOWN	3	24 :	222.8 pVS
UNKNOWN	4	23.7	28.8 pVS
UNKNOWN	5	44.6	21.8 pVS
UNKNOWN	6	180.4	3.3 pVS



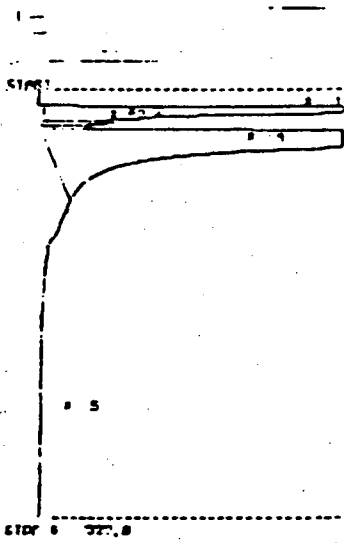
STOP 0 182.5
SAMPLE RUN JAN 21 1988 13:38
ANALYSIS # 3 OMEGA
TEMPERATURE 25 51
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/???
UNKNOWN	1	15.6	397.2 pVS
UNKNOWN	2	18.5	3.3 VS



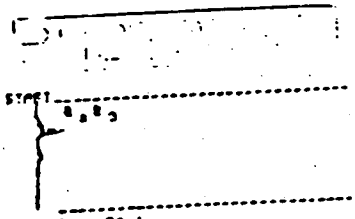
STOP 0 81.5
SAMPLE RUN JAN 21 1988 13:53
ANALYSIS # 2 OMEGA
TEMPERATURE 20 53
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/???
UNKNOWN	1	16.4	182.8 pVS



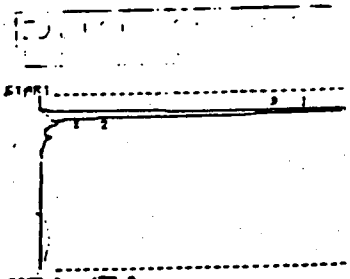
STOP 0 227.8
SAMPLE RUN JAN 21 1988 14: 3
ANALYSIS # 13 OMEGA
TEMPERATURE 27 54
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/???
UNKNOWN	1	10.5	10.0 VS
UNKNOWN	2	23.3	632.8 pVS
UNKNOWN	3	25.1	781.4 pVS
UNKNOWN	4	38.2	55.6 VS



STOP 0 81.1
SAMPLE RUN JAN 21 1988 13:43
ANALYSIS # 5 OMEGA
TEMPERATURE 23 57
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/???
UNKNOWN	1	10.3	5.6 pVS
UNKNOWN	2	15.6	19.8 pVS
UNKNOWN	3	38.2	149.3 pVS



STOP 0 123.8
SAMPLE RUN JAN 21 1988 13:58
ANALYSIS # 9 OMEGA
TEMPERATURE 23 53
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/???
UNKNOWN	1	10.8	5.8 VS
UNKNOWN	2	23.6	19.2 pVS

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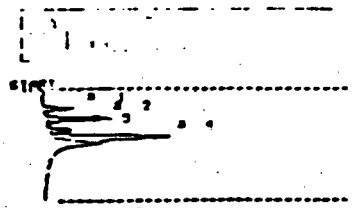
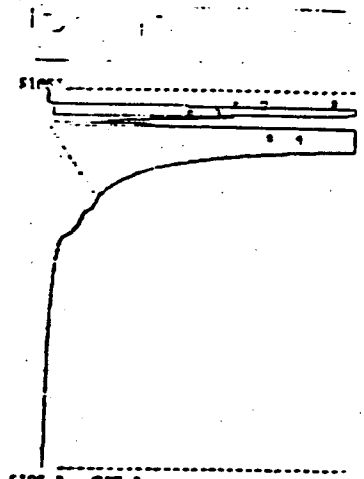


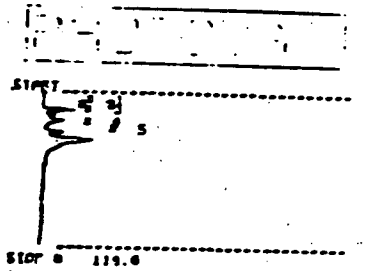
STOP @ 89.8
SAMPLE RUN JAN 21 1988 14:17
ANALYSIS # 16 OMEGA
TEMPERATURE 30 55
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/HT
Unknown	1	15.9	107.5 pVS
Unknown	2	39.9	151.5 pVS
Unknown	3	51.3	811.6 pVS
Unknown	4	87.9	303.7 pVS



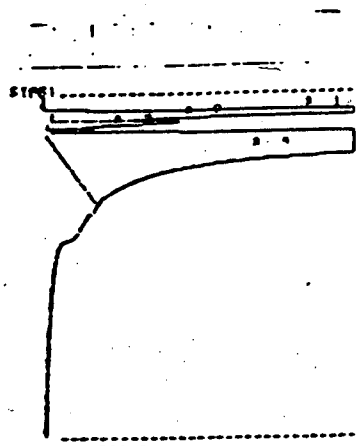
STOP @ 293.3
SAMPLE RUN JAN 21 1988 14:27
ANALYSIS # 17 OMEGA
TEMPERATURE 28 55
GAIN 10 PROBE Sample

COMPOUND NAME	PEAK	R.T.	AREA/HT
Unknown	1	10.9	8.5 US
Unknown	2	21.3	1.3 US
Unknown	3	88.3	317.8 pVS
Unknown	4	98.1	92.2 US



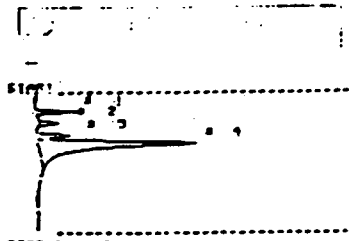
STOP @ 119.6
SAMPLE RUN JAN 21 1988 14:31
ANALYSIS # 20 OMEGA
TEMPERATURE 29 56
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/HT
Unknown	1	13.8	118.6 pVS
Unknown	2	18.3	23.6 pVS
Unknown	3	23.8	61.3 pVS
Unknown	4	91.3	183.3 pVS
Unknown	5	97.3	211.1 pVS



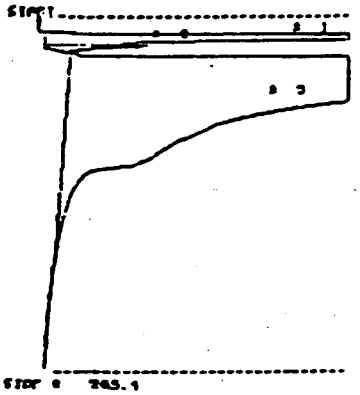
STOP @ 265.5
SAMPLE RUN JAN 21 1988 14:36
ANALYSIS # 21 OMEGA
TEMPERATURE 27 56
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/HT
Unknown	1	15.3	7.5 US
Unknown	2	27.3	1.5 US
Unknown	3	28.5	967.8 pVS
Unknown	4	93.4	83.6 US



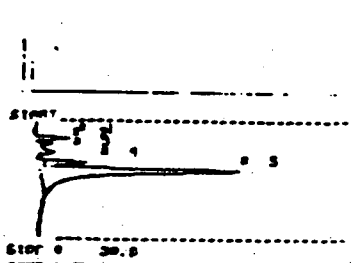
STOP @ 180.1
SAMPLE RUN JAN 21 1988 14:43
ANALYSIS # 24 OMEGA
TEMPERATURE 28 55
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/HT
Unknown	1	15.1	889.8 pVS
Unknown	2	22.3	151.9 pVS
Unknown	3	25.4	888.2 pVS
Unknown	4	93.7	8.2 US



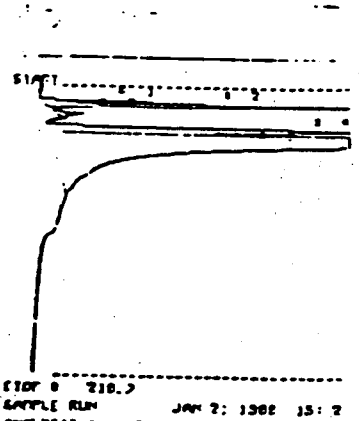
STOP @ 265.4
SAMPLE RUN JAN 21 1988 14:48
ANALYSIS # 25 OMEGA
TEMPERATURE 27 57
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/HT
Unknown	1	10.8	9.8 US
Unknown	2	27.8	358.4 pVS
Unknown	3	95.7	938.1 US



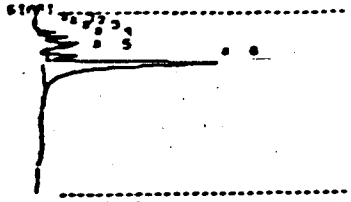
STOP @ 30.8
SAMPLE RUN JAN 21 1988 14:57
ANALYSIS # 23 OMEGA
TEMPERATURE 29 58
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/HT
Unknown	1	15.1	150.8 pVS
Unknown	2	19.5	64.1 pVS
Unknown	3	96.1	187.3 pVS
Unknown	4	99.4	975.4 pVS
Unknown	5	93.4	9.4 US



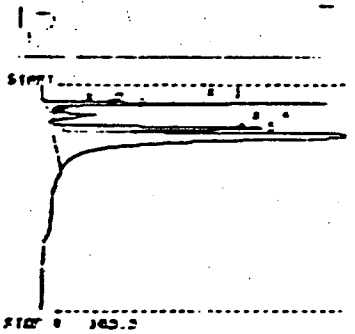
STOP @ 210.2
SAMPLE RUN JAN 21 1988 15:2
ANALYSIS # 30 OMEGA
TEMPERATURE 27 58
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/HT
Unknown	1	19.1	981.3 pVS
Unknown	2	15.8	1.6 US
Unknown	3	97.3	195.6 pVS
Unknown	4	93.9	9.3 US
Unknown	5	91.8	91.3 US



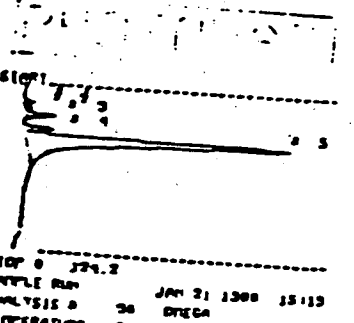
STOP @ 130.0
SAMPLE RUN JAN 7, 1988 15:0
ANALYSIS # 32 OMEGA
TEMPERATURE 77 53
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/HT
UNKNOWN	2	15.1	62.6 pVS
UNKNOWN	3	15.5	256.1 pVS
UNKNOWN	4	91.1	61.8 pVS
UNKNOWN	5	93.8	383.3 pVS
UNKNOWN	6	95.0	9.8 VS



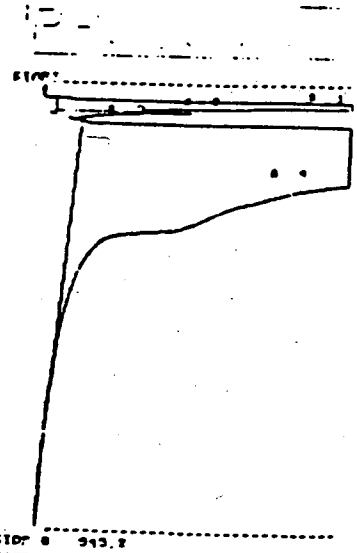
STOP @ 165.5
SAMPLE RUN JAN 7, 1988 15:11
ANALYSIS # 33 OMEGA
TEMPERATURE 77 53
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/HT
UNKNOWN	1	15.7	1.3 VS
UNKNOWN	2	15.9	183.6 pVS
UNKNOWN	3	91.7	121.5 pVS
UNKNOWN	4	91.8	7.8 VS
UNKNOWN	5	98.8	8.3 VS



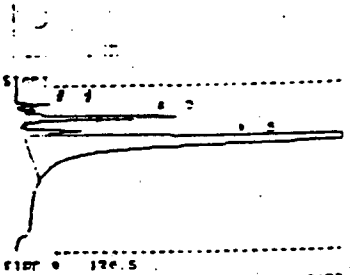
STOP @ 224.2
SAMPLE RUN JAN 7, 1988 15:13
ANALYSIS # 34 OMEGA
TEMPERATURE 25 510
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/HT
UNKNOWN	1	15.2	36.8 pVS
UNKNOWN	2	15.7	39.5 pVS
UNKNOWN	3	91.4	225.1 pVS
UNKNOWN	4	91.9	770.1 pVS
UNKNOWN	5	98.5	9.8 VS



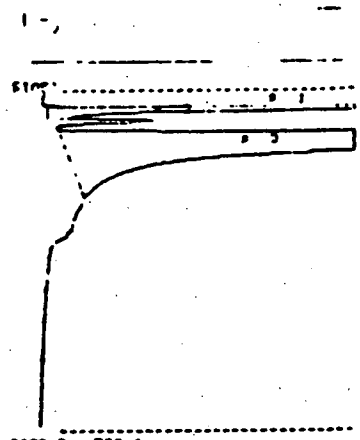
STOP @ 949.2
SAMPLE RUN JAN 7, 1988 15:20
ANALYSIS # 37 OMEGA
TEMPERATURE 25 510
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/HT
UNKNOWN	1	10.7	2.3 VS
UNKNOWN	2	77.0	1.9 VS
UNKNOWN	3	91.7	488.2 VS



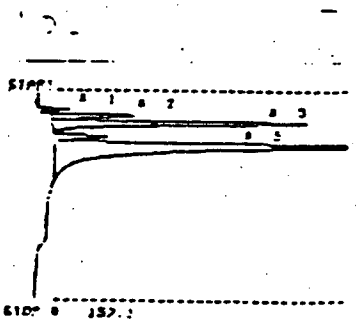
STOP @ 124.5
SAMPLE RUN JAN 7, 1988 15:37
ANALYSIS # 41 OMEGA
TEMPERATURE 77 511
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/HT
UNKNOWN	1	15.7	171.8 pVS
UNKNOWN	2	15.7	67.7 pVS
UNKNOWN	3	91.8	1.1 VS
UNKNOWN	4	91.8	515.8 pVS
UNKNOWN	5	91.9	19.7 VS



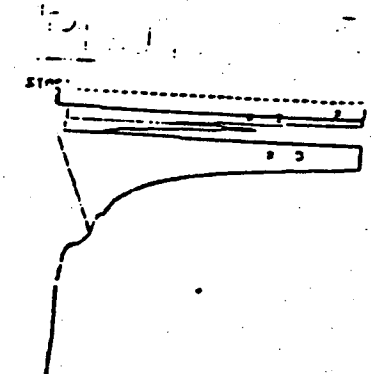
STOP @ 735.4
SAMPLE RUN JAN 7, 1988 15:47
ANALYSIS # 47 OMEGA
TEMPERATURE 25 511
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/HT
UNKNOWN	1	15.4	9.5 VS
UNKNOWN	2	77.8	1.8 VS
UNKNOWN	3	90.5	20.9 VS



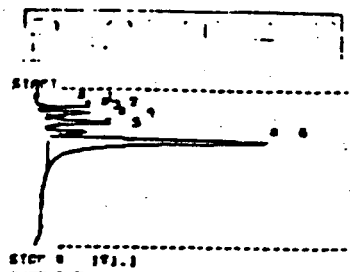
STOP @ 152.1
SAMPLE RUN JAN 7, 1988 15:51
ANALYSIS # 45 OMEGA
TEMPERATURE 76 517
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/HT
UNKNOWN	1	15.7	182.7 pVS
UNKNOWN	2	15.7	611.8 pVS
UNKNOWN	3	91.7	7.4 VS
UNKNOWN	4	91.8	97.5 pVS
UNKNOWN	5	91.8	6.5 VS



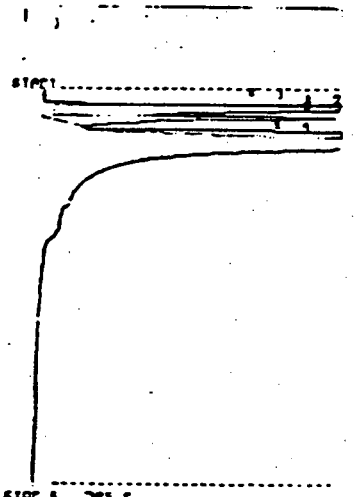
STOP @ 715.2
SAMPLE RUN JAN 7, 1988 15:55
ANALYSIS # 46 OMEGA
TEMPERATURE 76 517
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/HT
UNKNOWN	1	10.1	8.1 VS
UNKNOWN	2	77.4	2.2 VS
UNKNOWN	3	97.2	35.8 VS



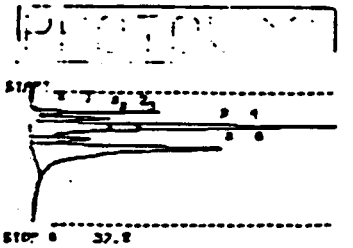
STOP @ 197.1
SAMPLE RUN JAN 21 1988 10: 3
ANALYSIS # 93 OMEGA
TEMPERATURE 26 S15
BAIN 10 PROBEP

COMPOUND NAME	PEAK	R.T.	AREA/PPT
UNKNOWN	1	15.4	104.4 pVS
UNKNOWN	2	20.0	928.3 pVS
UNKNOWN	3	22.2	72.8 pVS
UNKNOWN	4	27.4	985.7 pVS
UNKNOWN	5	29.5	982.3 pVS
UNKNOWN	6	32.3	9.8 VS



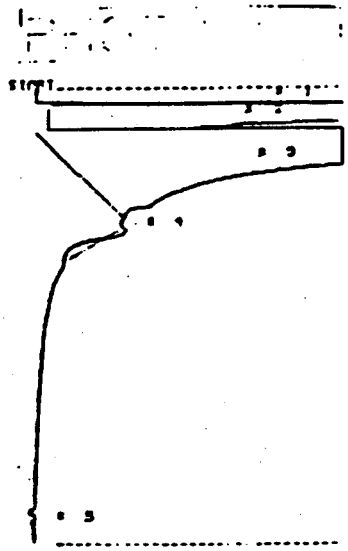
STOP @ 305.5
SAMPLE RUN JAN 21 1988 10:1
ANALYSIS # 30 OMEGA
TEMPERATURE 24 S15
BAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/PPT
UNKNOWN	1	12.3	1.3 VS
UNKNOWN	2	16.7	6.8 VS
UNKNOWN	3	22.6	9.8 VS
UNKNOWN	4	55.8	8.6 VS



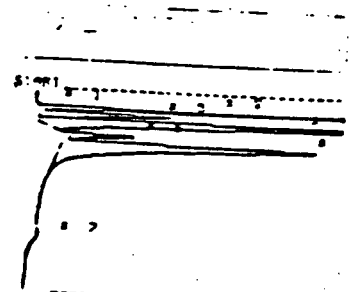
STOP @ 37.8
SAMPLE RUN JAN 21 1988 10:18
ANALYSIS # 32 OMEGA
TEMPERATURE 26 S14
BAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/PPT
UNKNOWN	1	13.1	13.2 pVS
UNKNOWN	2	16.[illegible]	[illegible]93.9 pVS
UNKNOWN	3	20.8	831.8 pVS
UNKNOWN	4	25.8	4.2 VS
UNKNOWN	5	35.8	779.6 pVS
UNKNOWN	6	42.4	4.7 VS



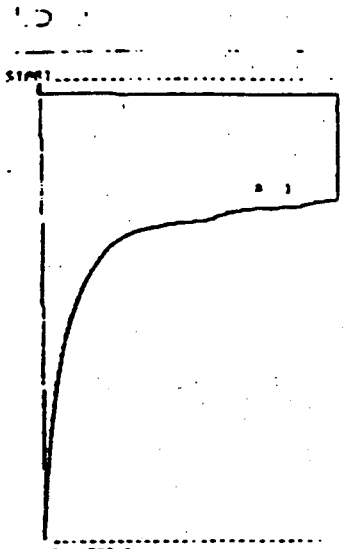
STOP @ 257.8
SAMPLE RUN JAN 21 1988 10:21
ANALYSIS # 33 OMEGA
TEMPERATURE 24 S14
BAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/PPT
UNKNOWN	1	15.8	1.2 VS
UNKNOWN	2	20.2	17.4 VS
UNKNOWN	3	42.8	139.8 VS
UNKNOWN	5	348.5	51.2 pVS



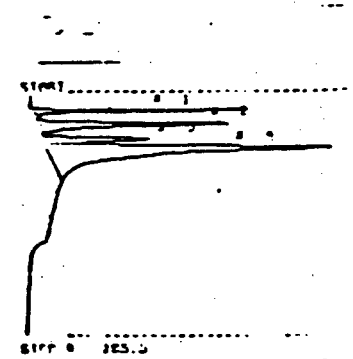
STOP @ 151.9
SAMPLE RUN JAN 21 1988 10:30
ANALYSIS # 35 OMEGA
TEMPERATURE 26 S15
BAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/PPT
UNKNOWN	1	13.2	9.1 pVS
UNKNOWN	2	15.2	1.8 VS
UNKNOWN	3	20.[illegible]	1.2 VS
UNKNOWN	4	25.4	5.5 VS
UNKNOWN	5	30.4	832.2 pVS
UNKNOWN	6	33.[illegible]	4.2 VS
UNKNOWN	7	118.2	91.5 pVS



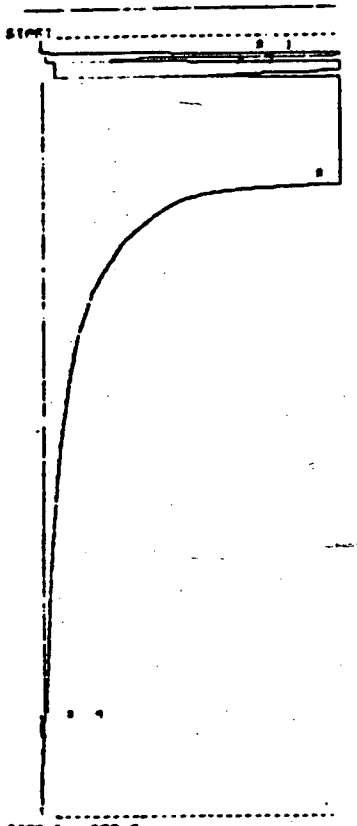
STOP @ 357.5
SAMPLE RUN JAN 21 1988 10:4
ANALYSIS # 36 OMEGA
TEMPERATURE 24 S15
BAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/PPT
UNKNOWN	1	33.8	1.8 VS



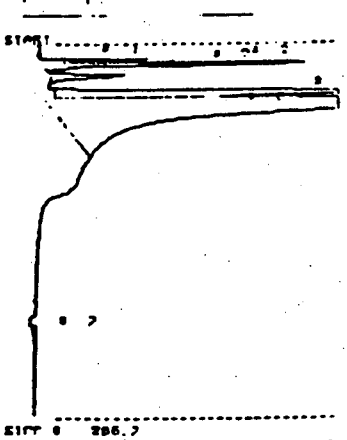
STOP @ 285.5
SAMPLE RUN JAN 21 1988 12: 4
ANALYSIS # 67 OMEGA
TEMPERATURE 24 S16
BAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/PPT
UNKNOWN	1	15.4	368.2 pVS
UNKNOWN	2	21.8	1.2 VS
UNKNOWN	3	22.8	1.1 VS
UNKNOWN	4	42.2	8.2 VS



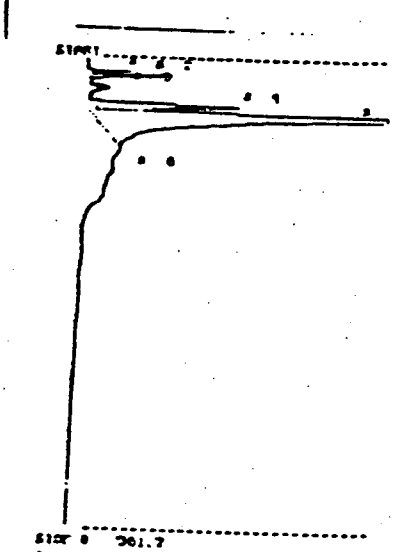
STOP @ 600.9
SAMPLE RUN JAN 21 1988 17:11
ANALYSIS # 65 OMEGA
TEMPERATURE 27 510
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/HT	
UNKNOWN	1	16.2	0.1	US
UNKNOWN	2	26.8	15.4	US
UNKNOWN	3	36.2	885.5	US
UNKNOWN	4	554	18.5	pVS



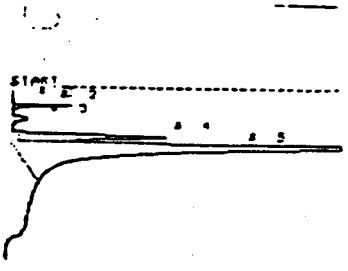
STOP @ 286.7
SAMPLE RUN JAN 21 1988 17:31
ANALYSIS # 66 OMEGA
TEMPERATURE 27 521
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/HT	
UNKNOWN	1	15.3	961.5	pVS
UNKNOWN	2	15.5	1.8	US
UNKNOWN	3	17.1	1.3	US
UNKNOWN	4	25.2	256.5	pVS
UNKNOWN	5	33.8	2.8	US
UNKNOWN	6	46.6	25.2	US
UNKNOWN	7	222.2	45.1	pVS



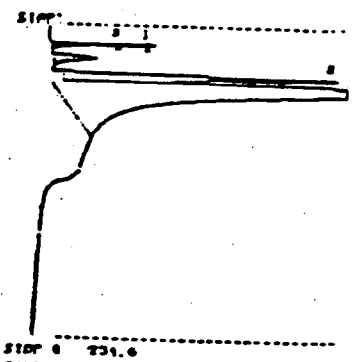
STOP @ 361.7
SAMPLE RUN JAN 21 1988 17:40
ANALYSIS # 71 OMEGA
TEMPERATURE 27 527
GAIN 10 SAMPLE

COMPOUND NAME	PEAK	R.T.	AREA/HT	
UNKNOWN	1	15.8	121.5	pVS
UNKNOWN	2	15.6	979.8	pVS
UNKNOWN	3	24.3	23.5	pVS
UNKNOWN	4	36.8	1.2	US
UNKNOWN	5	46.2	18.5	US



STOP @ 199.3
SAMPLE RUN JAN 21 1988 17:13
ANALYSIS # 70 OMEGA
TEMPERATURE 24 577
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/HT	
UNKNOWN	2	15.8	232.4	pVS
UNKNOWN	3	26.2	154.8	pVS
UNKNOWN	4	36.2	1.2	US
UNKNOWN	5	45.2	18.8	US



STOP @ 231.6
SAMPLE RUN JAN 21 1988 17:18
ANALYSIS # 67 OMEGA
TEMPERATURE 27 521
GAIN 10 PROBE

COMPOUND NAME	PEAK	R.T.	AREA/HT	
UNKNOWN	1	15.8	992.4	pVS
UNKNOWN	2	26.5	328.2	pVS
UNKNOWN	3	36.8	9.3	US
UNKNOWN	4	47.3	28.2	US

OMEGA CONFIDENTIAL

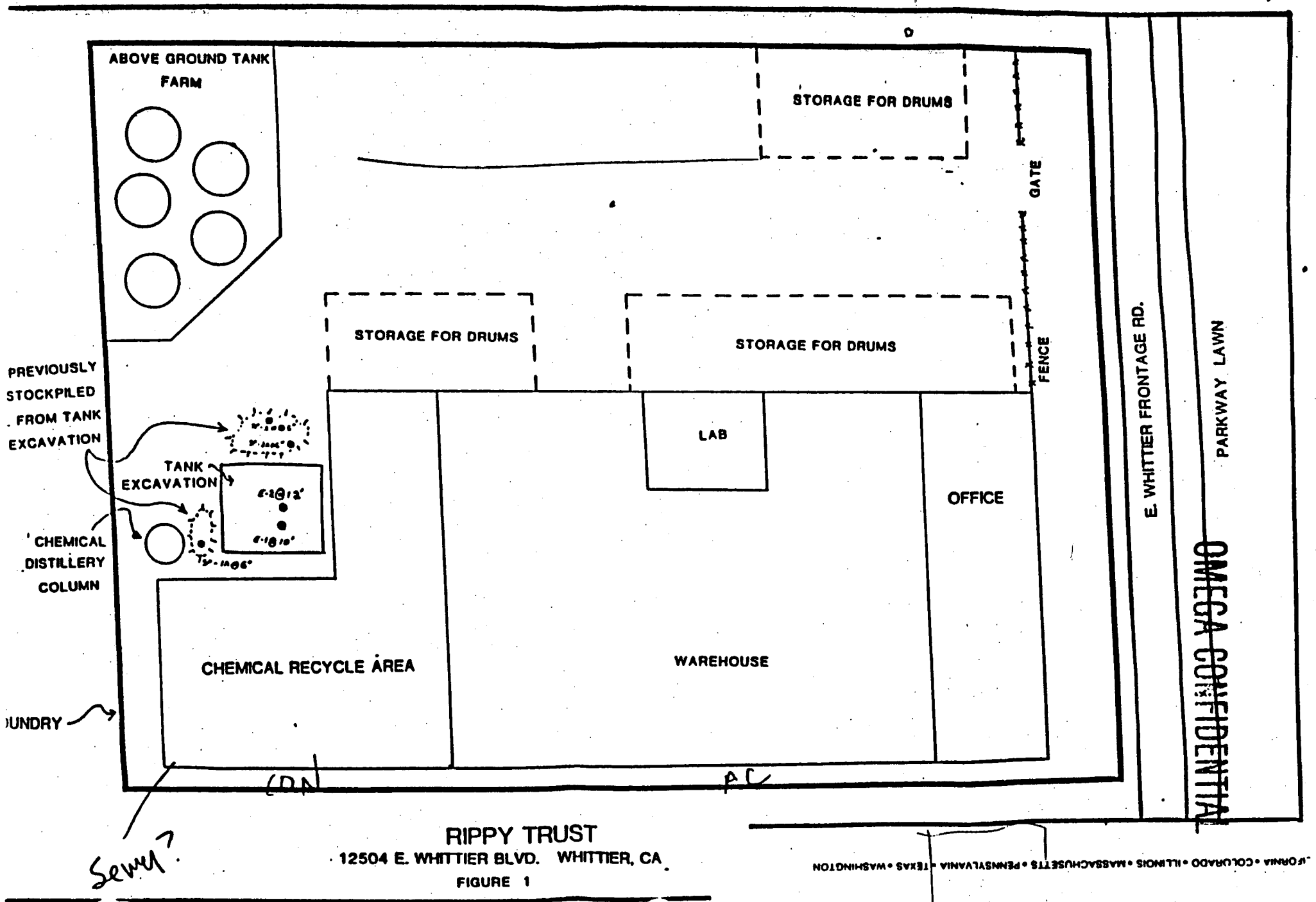
OMEGA CHEMICAL CORPORATION
SOIL GAS SURVEY RESULTS

Chromatographic Readings (Vs)

Location	Total Readings	Equipment Air Blank	Net Reading	Relative * Level
S1	4.19	0.00	4.19	Minor
S2	5.48	0.17	5.31	Minor
S3	5.01	0.11	4.90	Minor
S4	66.58	1.19	65.39	Moderate
S5	83.19	1.80	81.39	Moderate
S6	98.87	0.62	196.49	Substantial
S7	359.05	3.34	711.42	Substantial
S8	27.60	4.13	46.93	Moderate
S9	12.75	3.59	18.32	Moderate
S10	469.60	5.32	928.56	Substantial
S11	80.70	12.52	136.36	Substantial
S12	106.90	10.45	192.90	Substantial
S13	16.50	5.41	22.18	Moderate
S14	148.75	10.51	276.48	Substantial
S15	1600.00	21.96	3156.08	Very Substantial
S16	707.32	10.66	3483.29	Very Substantial
S17	Unable to Sample -			
S18	Unable to Sample			
S19	Unable to Sample			
S20	Unable to Sample			
S21	35.79	24.46	56.65	Moderate
S22	13.29	12.91	1.90	Minor

* Based on interpretations of chromatograms. The following levels are a general guideline:

0.0 < 1.0 Background or Trace Levels
1.0 - 10.0 Minor Levels
10.0 - 100.0 Moderate Levels
100.0 - 1000.0 Substantial Levels
>1000.0 Very Substantial Levels



RIPPY TRUST

12504 E. WHITTIER BLVD. WHITTIER, CA

FIGURE 1

Appendix D

ENSR Consulting and Engineering Investigation Report

DOCUMENT NO: 6715-001

DUPLICATE DOCUMENT
Do not send to Records Center

ENSR

REPORT ON SITE ASSESSMENT INVESTIGATIONS AT OMEGA RECOVERY FACILITY 12504 WHITTIER BOULEVARD, WHITTIER, CALIFORNIA

PREPARED FOR:
THOMSON & NELSON
WHITTIER, CALIFORNIA

BY:
ENSR CONSULTING & ENGINEERING
(FORMERLY ERT)
19782 MACARTHUR BOULEVARD, SUITE 365
IRVINE, CALIFORNIA 92715

OCTOBER 1988

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INTRODUCTION

The subject site is a solvent recycling facility, located at 12504 Whittier Boulevard, in Whittier, California (see Figure 1, Site Location Map). In January, 1988, a soil vapor survey was conducted on the site to screen the near surface soils for hydrocarbon presence. Results of that investigation are described in the ERT letter report dated February 29, 1988 and briefly summarized here.

Using a portable gas chromatograph and specially designed soil vapor probes, a total of 18 points were sampled and analyzed for hydrocarbons in the vapors extracted from the soil. To summarize the results, significant levels of hydrocarbons were detected in the soil vapors at points along the driveway of the existing facility. These hydrocarbon levels generally increased toward the back of the facility (southwest). Points sampled along the front of the site (along Whittier Boulevard on the northeast) and along the southeastern border, exhibited what is considered background or insignificant levels. Because of the significant levels of vapors detected in sample points along the facility driveway, additional investigations were conducted.

OBJECTIVE

The purpose of the additional investigation was to collect groundwater and subsurface soil samples for laboratory analysis from which to identify groundwater and subsurface contamination on the subject site. Soil boring locations and depths were selected to estimate the extent of possible contamination, based on the results of the soil vapor survey mentioned above.

FIELD ACTIVITIES

Field activities were conducted on March 19, June 11, 12, 14, 16, and 21, 1988. Five (5) soil borings were drilled across the site. In addition, one monitoring well was constructed from which three (3) groundwater samples were collected. The locations of these borings and monitoring well where chosen based on the results of the previous soil vapor survey, and are shown on Figure 2, Site Plan. All field activities were conducted in accordance with the site Health and Safety Plan.

Soil Borings

The soil borings were drilled with a mobile drill rig equipped with six-inch and ten-inch hollow-stem augers. All soil cuttings generated during drilling operations were stockpiled onsite in labeled 55-gallon metal drums. Soil samples were collected every 5 feet.

Soil samples were collected using a 2 foot long, 2-inch inside diameter modified California split spoon sampler, fitted with brass tubes. All sampling equipment was thoroughly cleaned and decontaminated before sample collection. Decontamination consisted of a tap water rinse, a thorough scrubbing with tap water and trisodium phosphate (TSP) detergent, a second tap water rinse, and a final rinse with distilled water. Lithologic logs of the boreholes were compiled from drill cuttings and split-spoon samples by a geologist from our firm and are included in Appendix A. Soils were described in accordance with the Unified Soil Classification System. Soil moisture, solvent or hydrocarbon odors, and other significant characteristics were noted on the boring logs.

During drilling, ambient air was monitored by an explosimeter and an HNu portable vapor analyzer. Ambient temperature headspace (ATH) analysis was performed on all soil samples using a HNu model PI-101 photoionization detector (PID) to screen for volatile organic compounds (VOCs). A portion of the soil retrieved in the sampler was placed in glass jars, approximately 1/2 to 3/4 filled, and capped with aluminum foil. After the soil temperature was allowed to equilibrate with ambient temperature, the headspace in the jar was analyzed with the HNu. The results were recorded on the boring logs.

The soil samples were prepared for shipment to the laboratory as follows. Upon retrieval from the sampler, the lead tube was covered on both ends with Teflon film and plastic end caps. The end caps were secured with plastic tape. The sample was identified with indelible ink. Each sample was labelled with a boring number, sample depth, sample analysis, date and time collected, sealed in plastic bags, and placed in a cooled ice chest. The samples were transported with documented chain-of-custody forms to Associated Laboratories, a state-certified laboratory, for chemical analysis (Appendix B).

Prior to drilling each boring, the hollow-stem augers were decontaminated by steam cleaning. All borings were backfilled to grade with a concrete slurry. Soils encountered during drilling activities were predominantly SILTY CLAY (CL) top soil with gravel and CLAYEY SILT (ML). Alluvial SILTY CLAY (CL) and SILTY CLAYEY SAND (SM/SC) are encountered beneath the upper sediments. Cross sections A-A' and the boring logs represent the respective lithologies encountered (Appendix A).

Monitoring Well Installation and Groundwater Sampling

The boring log of Boring B-MW-1 in Appendix A presents a construction diagram of the monitoring well design of MW-1 including total depth of boring, depth to bottom of casing, position and length of screened interval, filter pack interval and bentonite seal interval. Boring of the pilot hole was performed with a ten-inch diameter hollow-stem auger (HSA) for soil sample collection, as described above.

Casing was set to the desired depth, which consisted of four-inch I.D. Schedule 40 PVC casing with flush coupled threaded joints, a PVC bottom plug and PVC cap at the top. The 10-foot screened interval was constructed with 0.02-inch slotted PVC screen.

Sand filter pack, consisting of No. 3 standard Monterey sand, was used to fill the annular space between the casing and the bore wall. The filter pack was placed inside the HSA to prevent formation materials from sloughing in around the screened interval as the augers were withdrawn.

A 2 foot thick bentonite seal was placed above the gravel pack using 1/4-inch Volclay bentonite pellets. The grout seal was placed in the interval from the top of the bentonite seal to immediately below the ground surface. A concrete well head with a locking utility box was then constructed to finish grade.

Well development consisted of bailing the well of approximately 5 borehole volumes, after construction of the well was complete. All well development water identified as potentially contaminated was stored onsite in sealed, labeled, 55-gallon drums and retained for proper disposal. Level D safety procedures were followed throughout the project with the capability of going to Level C protection if deemed necessary by the gas/air monitoring equipment. Level C protection was not required during the work at the Omega facility.

Groundwater Sampling

Monitoring well MW-1 was sampled on June 14, 16 and 21, 1988. Depth to groundwater was first measured in the well at 73.84 feet (6/14), 73.75 feet (6/16), and 73.7 feet (6/21) with an electric sounder. The well was then purged of a minimum four well volumes with a 4-inch submersible Grundfos pump. The purged water was stored onsite in 55-gallon metal drums. Groundwater samples were collected using a clean Teflon bailer and transferred into two 40-ml glass vials with fluorocarbon resin lined septa in a head space free condition. Sample vials were then properly labeled, sealed in plastic bags and stored on ice until delivery to a state-certified laboratory. Sample collection and chain-of-custody records are attached in Appendix B.

ANALYTICAL PROCEDURES

Soil samples were collected for chemical analysis based on field PID readings and visual/olfactory observations. Significant levels of VOCs were encountered during drilling in Borings B-1, B-MW-1, and B-MW-2 (see Boring Logs in Appendix A). The highest readings were observed approaching groundwater, which correlates well with the analytical results. None of the samples from B-3 were analyzed in the laboratory due to the lack of significant PID reading or visual/olfactory evidence of contamination. The soil samples selected and groundwater samples were analyzed for priority volatile organics using EPA Method 8240/624.

EPA Method 8240/624 is used to determine volatile organic compounds in soil and water, which is based upon a purge-and-trap, gas chromatographic/mass spectrometric (GS/MS) procedure. The components are separated via the gas chromatograph and detected using a mass spectrometer which is used to provide both qualitative and quantitative information.

ANALYTICAL RESULTS

Soil Samples

Analytical results of the soil samples are summarized in Table 1. Compounds detected consisted of a variety of chlorinated hydrocarbons including methylene chloride, 1,1,1-trichloroethane, trichloroethylene (TCE), and tetrachloroethylene (PCE). Actual Laboratory Reports and Chain-of-Custody Forms are attached in Appendix B.

Groundwater Samples

Analytical results of groundwater samples are summarized in Table 2. Compounds detected are consistent with those found in the soil samples collected. Actual Laboratory Reports and Chain-of-Custody Forms are attached in Appendix B.

SITE AND REGIONAL GEOLOGY/HYDROGEOLOGY

Regional Geology/Hydrogeology

The following discussion of the regional geology/hydrogeology is taken predominantly from:

Planned Utilization of Ground Water Basins of the Coastal Plain of Los Angeles County, Bulletin No. 104, California Department of Water Resources, 1961.

and

Hydrologic Report,1977-1980, Los Angeles County Flood Control District, 1987.

TABLE 1

SUMMARY OF SOIL ANALYTICAL RESULTS

Purgeable Organics EPA 8240:	B1-10	B1-25	B1-35	B2-5	B2-15	B3-20	BMW1-55	BMW1-75	BMW2-30	BMW2-50	California Department of Health Services contaminant (MCL) levels for groundwater ug/L	100 X MCL
Methylene chloride	ND	ND	ND	ND	ND	69	2,650	80	96	141	40	4,000
Acetone	56	ND	112	ND	ND	35	ND	ND	ND	ND	—	—
Chloroform	7	10	9	ND	ND	ND	ND	ND	ND	ND	4.3	430
2-Butanone	12	5	6	24	12	11	ND	ND	ND	ND	—	—
1,1,1-Trichloroethane	12	54	75	7	9	ND	874	74	23	27	200	20,000
Trichloroethylene	ND	32	42	19	45	ND	156	23	143	350	5	500
4-Methyl-2-2-pentanone	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	—	—
Tetrachloroethylene	20	129	257	84	127	5	854	98	143	266	4	400
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	156	146	ND	ND	3,400	340,000
1,1-Dichloroethylene	ND	ND	ND	ND	ND	ND	222	36	12	32	16	1,600
1,1-Dichloroethyne	ND	ND	ND	ND	ND	ND	19	ND	ND	ND	20	2,000
1,1,2-trichloro-1,2,2,-trifluoroethane	ND	ND	ND	ND	ND	ND	155	880	60	436	18,000	1,800,000
Toluene	10	5	ND	24	8	7	ND	ND	ND	ND	100	10,000

ND = non-detected at applicable detection limits.

All concentrations are reported in ug/kg (ppb).

TABLE 2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Purgeable Organics EPA 624	MW-1 6/14/88	MW-1 6/16/88	MW-1 6/21/88	CALIFORNIA STATE ACTION LEVELS
Methylene chloride	650*	260*	280*	40
Trichlorofluoromethane	1,540	1,718	ND	3,400
1,1-Dichloroethylene	1,080	836*	510*	6
1,1,1-Trichloroethane	2,080	2,150*	2,200*	200
Trichloroethylene	258	160*	120*	5
Tetrachloroethylene	1,030*	667*	510*	4
1,1,2-trichloro-1,2,2-trifluoroethane	5,240*	~~ND~~ NA NOT ANALYZED	~~ND~~ NA	3,400
trans-1,2-Dichloroethylene	ND	9	ND	16
Chloroform	ND	24	ND	—
Acetone	ND	ND	160	—

ND = non-detected at applicable detection limits
All concentrations are reported in ug/Kg (ppb).

* Concentrations above action level set by California Department of Health Services document, California Site Mitigation Tree, May 1986.

The subject site, which lies approximately 2.5 miles east of the San Gabriel River and approximately 2 miles southwest of the Puente Hills, is part of the Central Basin ground water basin of the Coastal Plain of Los Angeles County. Specifically, the site lies on the northeastern side of the Montebello Forebay area (part of the Central Basin). A "Forebay" is thought to be an area where surface waters can infiltrate and flow into unconfined aquifers, adding significantly to recharge of the aquifers.

Other important geologic features near the site include Whittier Narrows, Puente Hills and the associated alluvial deposits derived from them. The San Gabriel River flows in a southerly direction through the Whittier Narrows, which is located approximately 3 miles north of the site. The river flows from the San Gabriel Valley into the Coastal Plain.

The nature of groundwater flow through the Narrows is not exactly clear, but it is likely that some groundwater flow occurs from the San Gabriel Valley into the Coastal Plain. Otherwise, most of the recharge in the area of the site is thought to occur from surface water infiltration either at the percolation basins along the San Gabriel River or from runoff from the Puente Hills.

Groundwater flow is generally southwest, which is shown on the LACFCD Ground Water Contour Map (Figure 3). Groundwater flow generally originates in from an area of recharge and flows toward an area of discharge. In this area, groundwater flows away from the Puente Hills and toward the central part of the Los Angeles Basin.

Hydraulically downgradient, approximately 6 miles southwest of the site, lies the boundary between the Montebello Forebay and the Central Basin Pressure Area. A "Pressure Area" is one in which the aquifers are thought to be confined between layers of relatively low permeable

CONCLUSIONS

The results of the laboratory analysis indicates that chlorinated hydrocarbons are present in the subsurface soils and the uppermost groundwater beneath this site. The subsurface investigation and analytical results from the soil and groundwater samples suggest that soil and groundwater contamination are directly related. Because no groundwater production is occurring within the immediate area of the site and our assumed flow rate is less than 10 feet per year, there does not appear to be any imminent danger to life or health. The regional hydrogeology as described in Bulletin 104, suggests that the uppermost groundwater, which was sampled, may be in hydraulic connection with aquifers presently used for drinking water supplies. However, this connection may be significantly limited.

REFERENCE: USGS 7.5 MINUTE SERIES
WHITTIER QUADRANGLE 1981

SCALE

0 ¼ ½ 1 MILE

N

ERT

FIGURE 1, SITE LOCATION MAP

12504 WHITTIER BOULEVARD,
WHITTIER, CALIFORNIA

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CHK'D BY:	REVISED:	DWG.NO.:

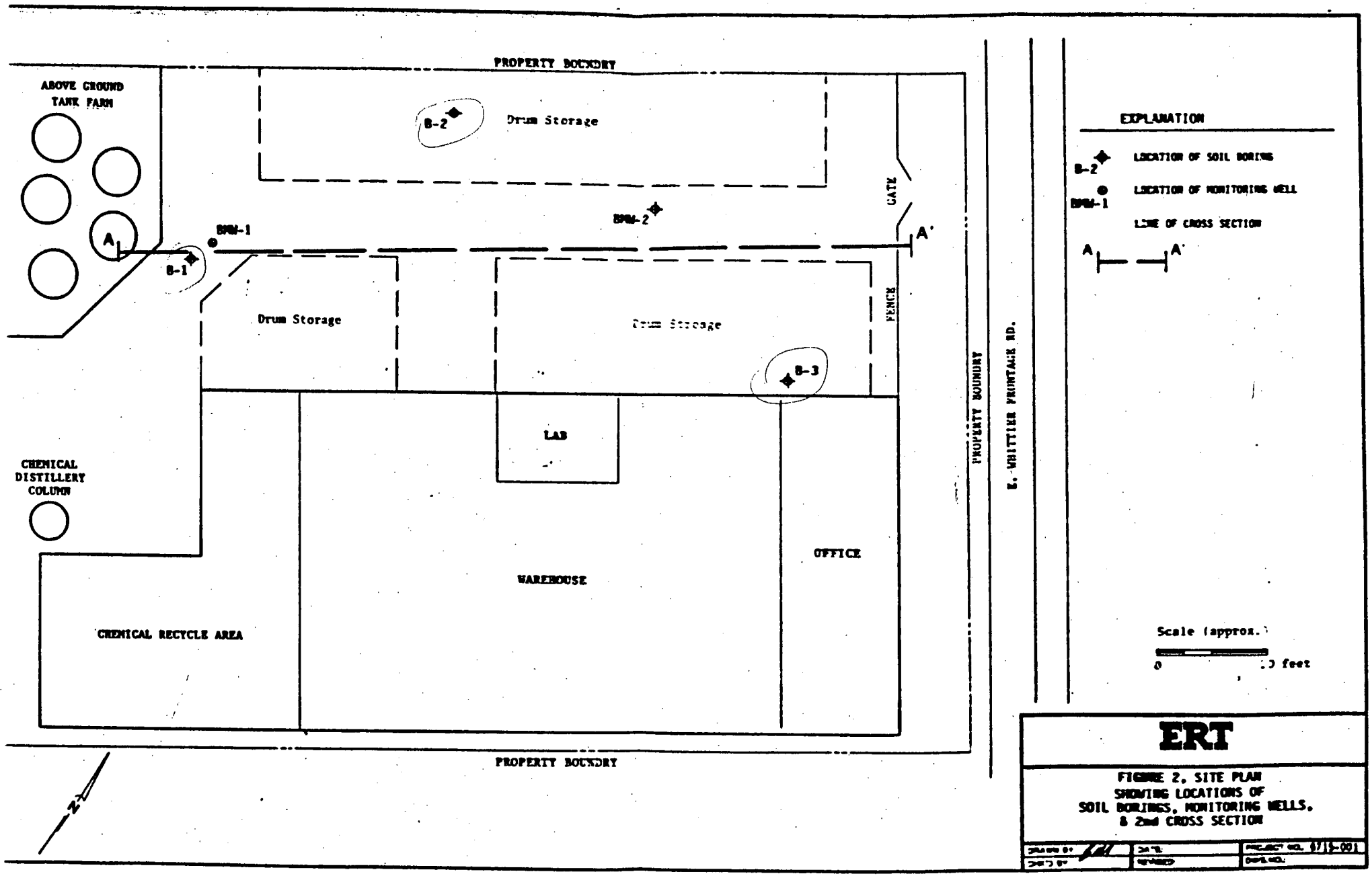

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FIGURE 2. SITE PLAN SHOWING LOCATIONS OF SOIL BORINGS, MONITORING WELLS, & 2nd CROSS SECTION

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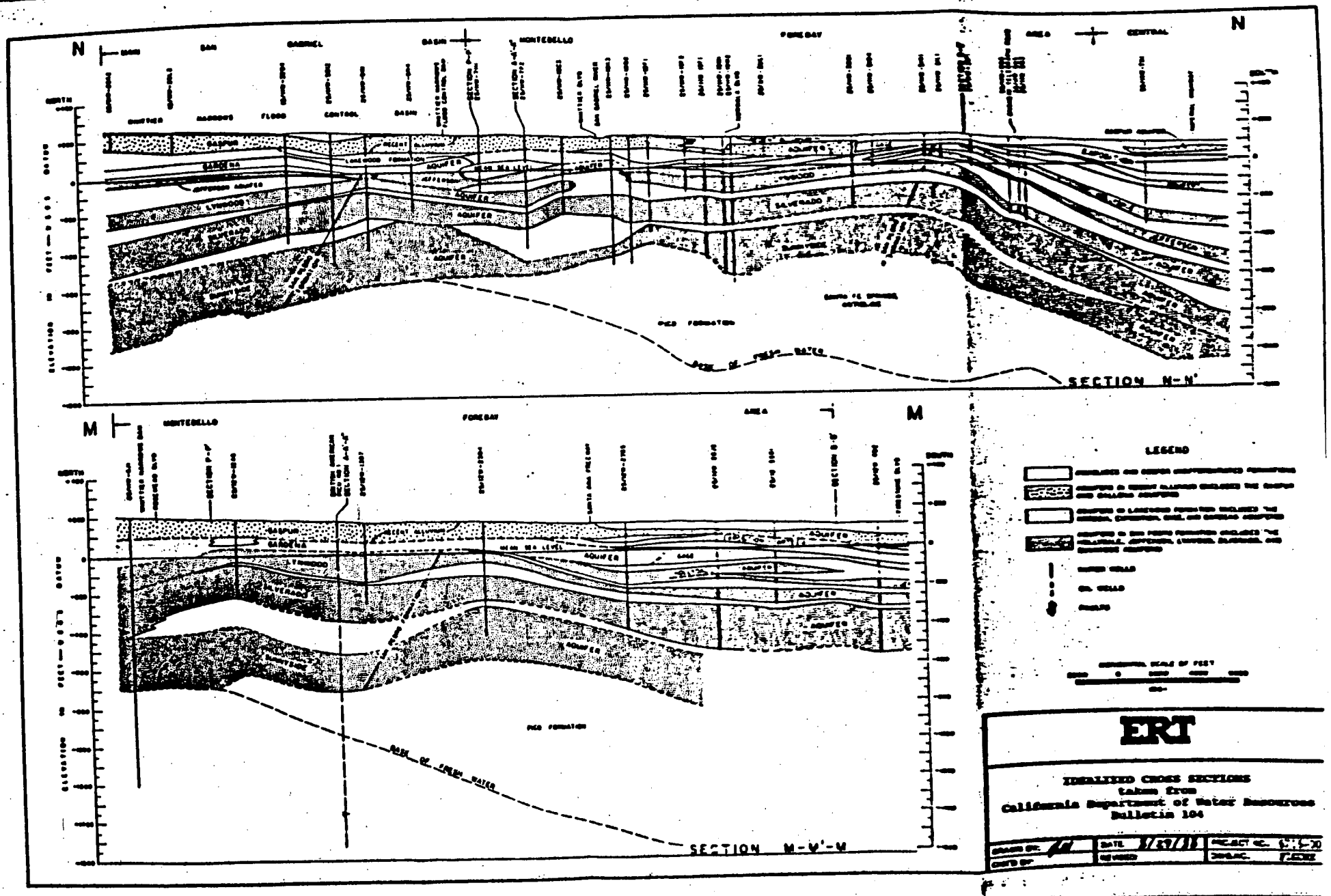
CHKD BY:	REVISED	DWG NO.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SECTION N-N'
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M
SECTION M-M'-M
LEGEND
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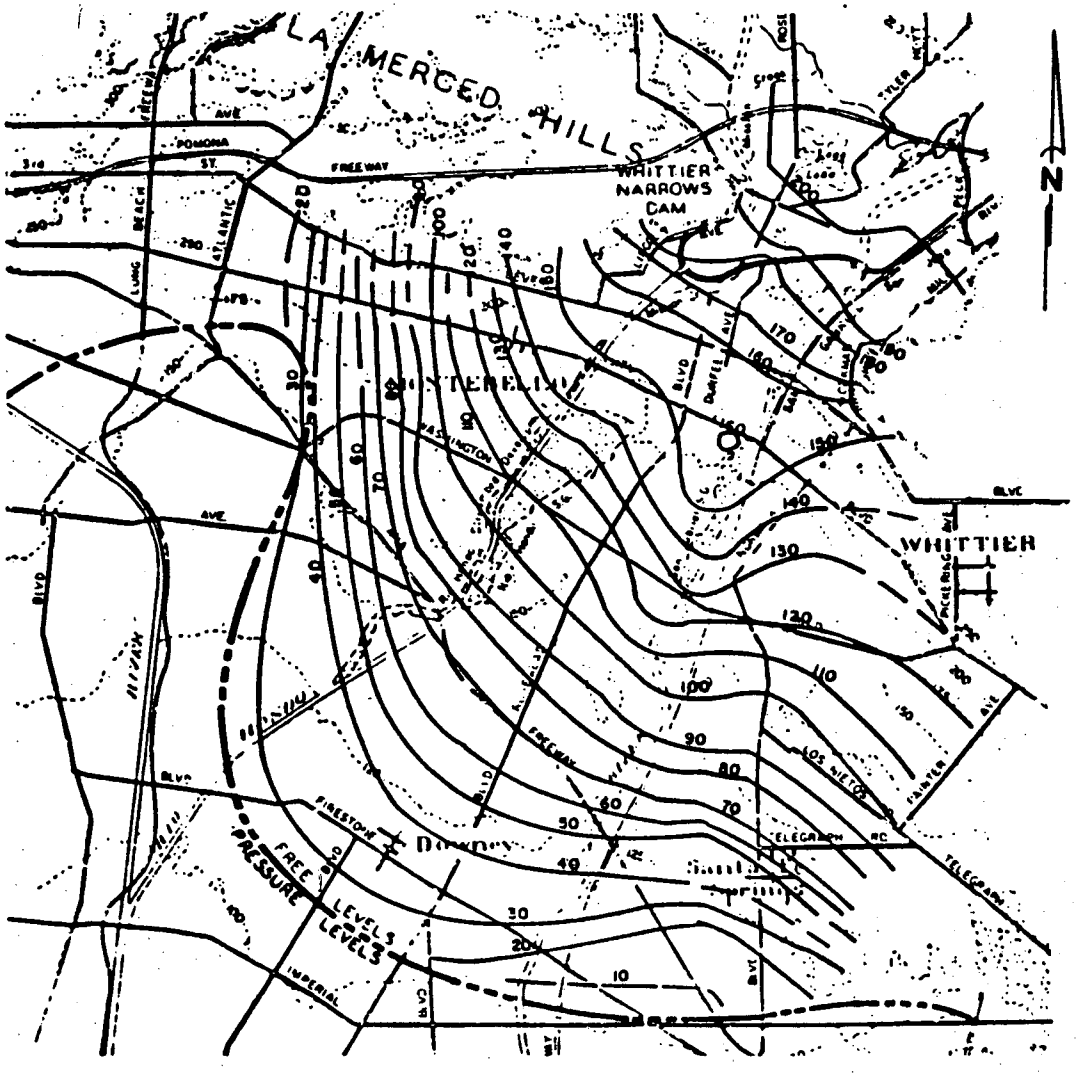
IDEALIZED CROSS SECTIONS
taken from
California Department of Water Resources
Bulletin 104



LEGEND

- LINES OF FREE GROUND WATER ELEVATION OR PRESSURE (APPROXIMATE).
- SAME AS ABOVE ESTIMATED.
- GEOLOGIC LOCATION OF GROUND WATER BARRIER.
- TRANSITION LINES FROM FREE TO PRESSURE GROUND WATER LEVEL (APPROXIMATE) (D.W.R. BULLETIN NO. 45).
- TOPOGRAPHIC CONTOURS.
- SPREADING GROUNDS.
- REACH OF RISING WATER.
- CHANNEL, CONCRETE LINED SIDES AND BOTTOM.
- CHANNEL WITH OPEN BOTTOM AND CONCRETE SIDES.
- NATURAL STREAMBED.

0 1 2 3

SCALE IN MILES

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

MONTEBELLO FOREBAY

GROUND WATER CONTOURS

SHALLOW AQUIFER

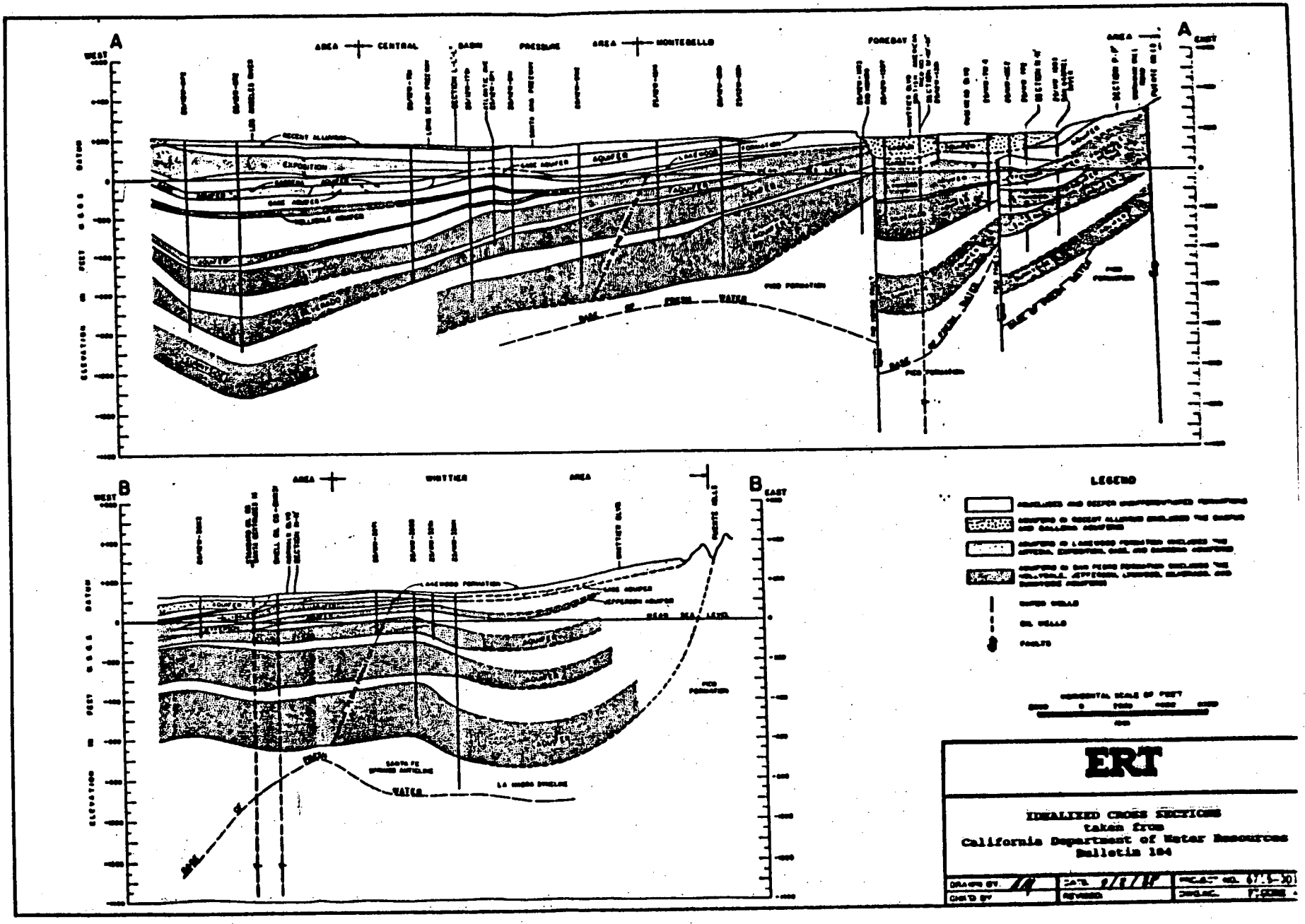
FALL 1979

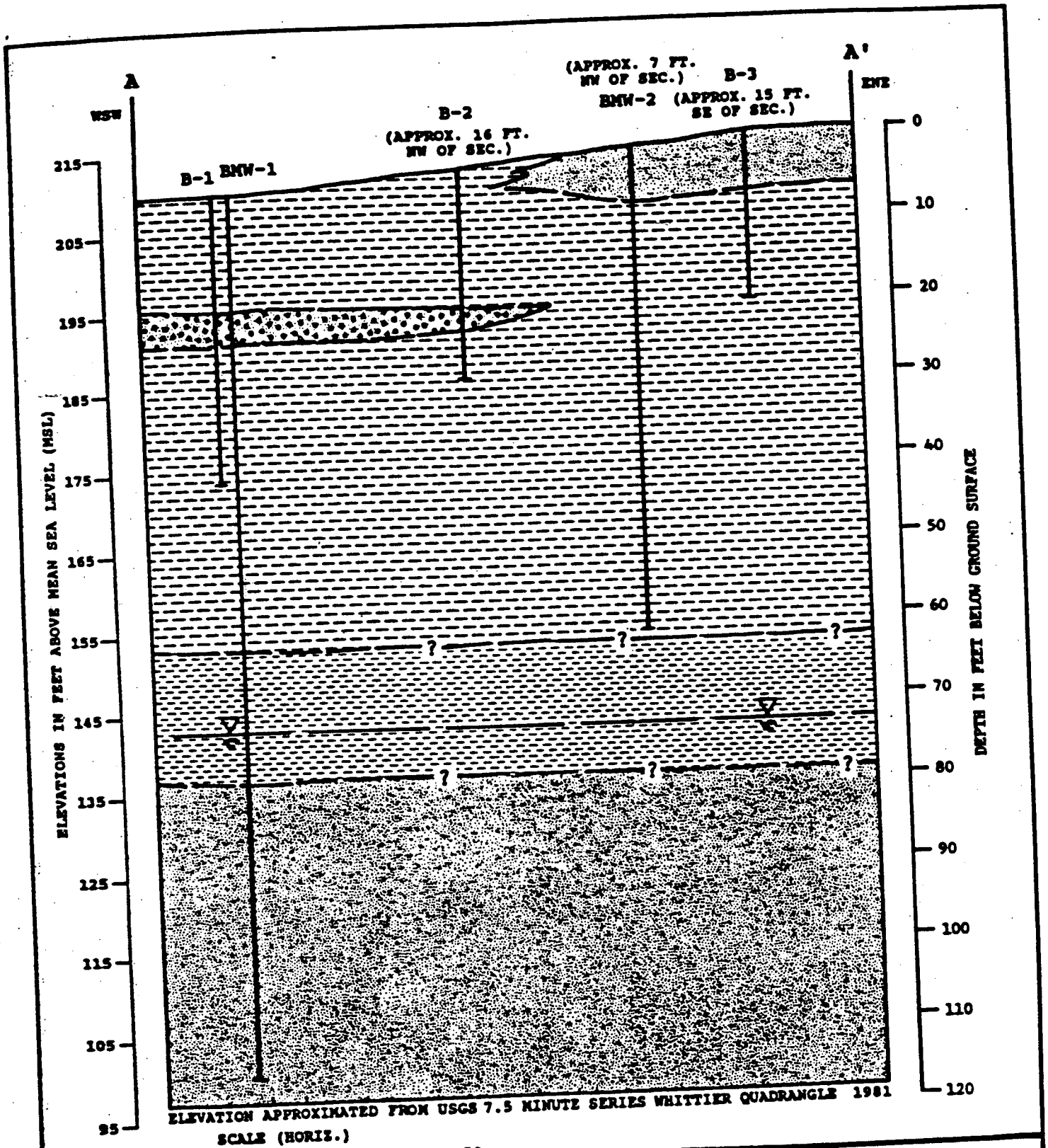
SCALE	PREPARED	DATE
1" = 2000'		

ERT

GROUND WATER CONTOUR MAP
taken from
Los Angeles County Flood Control District
Hydrologic Report
May 1987

DRAWN BY	DATE	PROJECT NO.
CHK'D BY	REVISED	DWG. NO.


A
A
B
B
LEGEND
ERT
IDEALIZED CROSS SECTIONS
taken from
California Department of Water Resources
Bulletin 104



ERT

GENERALIZED CROSS SECTION
OMEGA RECOVERY
WHITTIER, CALIFORNIA

6715-001-200

DRAWN BY:	DATE: 1/28/93	PROJECT NO: 6715-001
CHK'D BY:	REVISED:	DWG.NO.: FIGURE 6

ERT.
AN ENSR COMPANY

SUBSURFACE EXPLORATION — LITHOLOGIC LOG OF B-1

Client : THOMSON & NELSON
Project Name : OMEGA RECOVERY
Project Location : WHITTIER, CA.
Job Number : 6715-001-200 Boring No : B-1
Logged By : M. WOOD
Approved By :
Drilled By : A & R DRILLING

DRILLING AND SAMPLING INFORMATION
Date Started : 3/19/88 Date Completed : 3/19/88
Method : HSA Total Depth : 36 FEET

WELL COMPLETION INFORMATION
Screen Dia : Length :
Slot Size : Type :
Casing Dia : Length :

DEPTH IN FEET	DESCRIPTION SURFACE ELEVATION : 210 FEET, U.S.G.S. WHITTIER, CA.	SAMPLE NO.	SAMPLE TYPE	RECOVERY (FEET)	BLOW COUNT	PID *	GRAPHIC LOG	WELL COMPLETION	WATER LEVEL
5	2-inches Asphaltic Concrete QUATERNARY ALLUVIUM (Qal) SILTY CLAY (CL) dark brown, dry to moist, soft, slightly plastic, trace of fine gravel, trace of white caliche	5	SS	1.5	4	5			
10	becomes light brown	10	SS	1.5	8	0			
15	GRAVELLY CLAY (ML/CL) light brown, dry to moist, stiff to very firm, slightly plastic, white fracture coatings, up to 10% fine to coarse gravel	15	SS	1.5	15	20+			
20	CLAYEY SILT (ML)/SILTY CLAY (CL) brown, moist, stiff, non-plastic to slightly plastic, trace of coarse to fine grained sand	20	SS	1.5	19	48			
25		25	SS	1.5	13	38			
30	no recovery	30	SS	0	X	X			
35	continued (ML/CL)	35	SS	1	15	100+			
40	Bottom of boring at 36 feet. No groundwater encountered.								
45									
50									
55	* PID: PHOTO-IONIZATION DETECTOR VALUE (eV)								

SAMPLER TYPE
SS - DRIVEN SPLIT SPOON RC - ROCK CORE

BORING METHOD
HSA - HOLLOW STEM AUGER DC - DRIVING CASING
MD - MUD DRILLING

ERT.
AN ENSR COMPANY -

SUBSURFACE EXPLORATION — LITHOLOGIC LOG OF B-2

Client : THOMSON & NELSON
Project Name : OMEGA RECOVERY
Project Location : WHITTIER, CA
Job Number : 6715-001-200 Boring No : B-2
Logged By : M. WOOD
Approved By :
Drilled By : A&R DRILLING

DRILLING AND SAMPLING INFORMATION
Date Started : 3/19/88 Date Completed : 3/19/88
Method : HSA Total Depth : 26 FEET

WELL COMPLETION INFORMATION
Screen Dia : Length :
Slot Size : Type :
Casing Dia : Length :

SURFACE ELEVATION : 213 FEET

DEPTH IN FEET	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	RECOVERY (FEET)	BLOW COUNT	PID *	GRAPHIC LOG	WELL COMPLETION	WATER LEVEL
5	3-inches Asphaltic concrete QUATERNARY ALLUVIUM (Qal) SILTY CLAY (CL) dark brown, soft to firm, moist, slightly plastic, trace of fine gravel, white caliche coatings on fractures	5'	SS		11	20+			
10	continued SILTY CLAY (CL)	10'	SS		9	20+			
15	increase in silt and fine gravel	15'	SS		9	40			
20	continued SILTY CLAY (CL) becomes firm with up to 1% fine gravel	20'	SS		11	32			
25	continued SILTY CLAY (CL)	25'	SS		16	14			
30	Bottom of hole at 26 feet No groundwater encountered								
35									
40									
45									
50									
55									

* PID: PHOTO-IONIZATION DETECTOR VALUE (eV)

SAMPLER TYPE
SS - DRIVEN SPLIT SPOON RC - ROCK CORE

BORING METHOD
HSA - HOLLOW STEM AUGER DC - DRIVING CAS

ERT.

AN ENSR COMPANY -

SUBSURFACE EXPLORATION

LITHOLOGIC LOG OF B-3

Client : THOMSON & NELSON
Project Name : OMEGA RECOVERY
Project Location : WHITTIER, CA
Job Number : 6715-001-200 Boring No : B-3
Logged By : M. WOOD
Approved By :
Drilled By : A&R DRILLING

DRILLING AND SAMPLING INFORMATION
Date Started : 3/19/88 Date Completed : 3/19/88
Method : HSA Total Depth : 20.5 FEET

WELL COMPLETION INFORMATION
Screen Dia : Length :
Slot Size : Type :
Casing Dia : Length :

SURFACE ELEVATION : 216 FEET, U.S.G.S. WHITTIER, CA.

DEPTH IN FEET	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	RECOVERY (FEET)	BLOW COUNT	PID •	GRAPHIC LOG	WELL COMPLETION	WATER LEVEL
5	2-inches Asphaltic concrete, soft QUATERNARY ALLUVIUM (Qal) GRAVELLY SANDY SILT (SM/ML) dark brown, soft to loose, dary to damp, with up to 5% fine to coarse gravel, white caliche on fractures	5'	SS		6	0			
10	SANDY SILT (ML) brown, soft to firm, damp, non-plastic, very fine grained sand, trace of fine gravel	10'	SS		4	0			
15	becomes stiff	15'	SS		27	0			
20	continued SANDY SILT (ML)	20'	SS		6	10			
25	Bottom of hole at 20.5 feet No groundwater encountered Hole backfilled with 4 bags of concrete cement								
30									
35									
40									
45									
50									
55									

• PID: PHOTO-IONIZATION DETECTOR VALUE (eV)

SAMPLER TYPE

BORING METHOD

ERT.
AN ENSR COMPANY

SUBSURFACE EXPLORATION — LITHOLOGIC LOG OF B-MW-1

Client : THOMSON & NELSON
Project Name : OMEGA RECOVERY
Project Location : WHITTIER, CA
Job Number : 6715-002-200 Boring No : B-MW-1
Logged By : K. PITCHFORD, R.G.
Approved By :
Drilled By : INTERSTATE SOILS SAMPLING

DRILLING AND SAMPLING INFORMATION
Date Started : 6/11/88 Date Completed : 6/12/88
Method : HSA, 10-INCH Total Depth : 110 FEET
WELL COMPLETION INFORMATION
Screen Dia : 4-INCH Length : 10 FEET
Slot Size : 0.02-INCH Type : MILL SLOT
Casing Dia : 4-INCH Length : 90 FEET

SURFACE ELEVATION : 210 FEET, U.S.G.S. WHITTIER, CA.

DEPTH IN FEET	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	RECOVERY (FEET)	BLOW COUNT	PID *	TIME
	QUATERNARY ALLUVIUM (Qal) SANDY CLAY (CL) medium brown, slightly moist, soft, slightly plastic, no staining or odor						
5	SANDY SILTY CLAY (CL)/CLAYEY SILT (ML) light medium brown, with trace fine to coarse sand and fine gravel, slightly moist, no staining or odor		SS	1.5	13	40	815
10			SS	1.5	15	35	830
15	CLAYEY GRAVEL (GC) rounded and angular clasts in sandy-clayey matrix, slightly moist, no staining or odor		SS	1.5	38	20	845
20	SANDY SILTY CLAY (CL) dark brown, with trace of coarse sand and fine to coarse gravel, slightly moist, no staining or odor		SS	1.5	34	22	855
25			SS	1.5	38	105	900
30			SS	1.5	23	102	920
35			SS	1.5	32	140	1000
40			SS	1.5		150	
45			SS	1.5	31	50	1110
50			SS	1.5		68	
55		55	SS	1.5		120	
	SILTY CLAYEY SAND (ML)/SILTY SANDY CLAY (CL) medium dark brown slightly moist, no staining or odor						

GRAPHIC LOG | WELL COMPLETION | WATER LEVEL

SAMPLER TYPE

ERT.
AN ENSR COMPANY -

SUBSURFACE EXPLORATION — LITHOLOGIC LOG OF B-MW-1

Client : THOMSON & NELSON
Project Name : OMEGA RECOVERY
Project Location : WHITTIER, CA
Job Number : 6715-002-200 Boring No : B-MW-1
Logged By : K. PITCHFORD, R.G.
Approved By :
Drilled By : INTERSTATE SOILS SAMPLING

DRILLING AND SAMPLING INFORMATION
Date Started : 6/11/88 Date Completed : 6/12/88
Method : HSA, 10-INCH Total Depth : 110 FEET
WELL COMPLETION INFORMATION
Screen Dia : 4-INCH Length : 10 FEET
Slot Size : 0.02-INCH Type : MILL SLOT
Casing Dia : 4-INCH Length : 90 FEET

SURFACE ELEVATION : 210 FEET, U.S.G.S. WHITTIER, CA.

DEPTH IN FEET	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	RECOVERY (FEET)	BLOW COUNT	PID *	TIME
60	continued SILTY CLAYEY SAND (ML)/SILTY SANDY CLAY (CL)		SS		30	90	
	slight increase in sand and fine gravel, including weathered rock fragments or clasts from 62 to 73 feet.						
65	becomes moist		SS			120	1230
70		55	SS	1.5		140	
	SILTY CLAYEY SAND (SM/SC) light brown, with trace of weathered gravel, moist to very moist, no staining or odor						
75			SS			5	
80			SS			4	240
85			SS			2	315
90			SS				400
95							
100							
105							
110	Bottom of hole at 110 feet. Groundwater encountered at 75 feet.						
115							

GRAPHIC LOG | WELL COMPLETION | WATER LEVEL 6/11/88

* PID: PHOTO-IONIZATION DETECTOR VALUE (eV)

SAMPLER TYPE — BORING METHOD

ERT.
AN ENSR COMPANY -

SUBSURFACE EXPLORATION

LITHOLOGIC LOG OF B-MW-2

Client : THOMSON & NELSON
Project Name : OMEGA RECOVERY
Project Location : WHITTIER, CA
Job Number : 6715-002-200 Boring No : B-MW-2
Logged By : K. PITCHFORD, R.G.
Approved By :
Drilled By : INTERSTATE SOILS SAMPLING

DRILLING AND SAMPLING INFORMATION
Date Started : 6/11/88 Date Completed : 6/11/88
Method : HSA, 8-INCH Total Depth : 60 FEET
WELL COMPLETION INFORMATION
Screen Dia : Length :
Slot Size : Type :
Casing Dia : Length :

DEPTH IN FEET	DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	RECOVERY (FEET)	BLOW COUNT	PID *	TIME	GRAPHIC LOG	WELL COMPLETION	WATER LEVEL
	SURFACE ELEVATION : 214 FEET, U.S.G.S. WHITTIER, CA.									
	2-inch Asphaltic concrete with 4-inch gravel base SILTY SAND (SM) light brown, dry, trace of fine gravel, no staining or odor									
5			SS		10	40				
	QUATERNARY ALLUVIUM (Qal) SANDY CLAY (CL) dark brown, slightly moist, trace of fine to coarse gravel, no staining or odor									
10			SS		32	45	500			
15			SS		32	50				
20			SS		21	60				
	SILTY CLAY (CL) dark brown, slightly moist, trace to minor fine sand, no staining or odor									
25			SS		43	75				
30		30	SS	1.5	30	85	530			
35			SS		39	70	545			
40			SS		24	60				
45			SS		44	105				
50		50	SS		38	100	600			
	Bottom of hole at 60 feet. No groundwater encountered.									
55			SS		64	90	615			
	SILTY SAND (SM) medium brown, moist, low cohesion, trace clay, no staining or odor									
			SS		33					

* PID: PHOTO-IONIZATION DETECTOR VALUE (eV)

SAMPLER TYPE
SS - DRIVEN SPLIT SPOON RC - ROCK CORE
ST - PRESSED SHELBY TUBE CT - CONTINUOUS TUBE

BORING METHOD
HSA - HOLLOW STEM AUGER DC - DRIVING CASING
CFA - CONTINUOUS FLIGHT AUGERS MD - MUD DRILLING

ASSOCIATED LABORATORIES
806 North Batavia · Orange, California 92668 · 714/771-6900

CLIENT
ERT
19782 MacArthur Blvd.
Suite 365
Irvine, CA 92715
Attn: Charles Keller

(2013) LAB NO. F46347
REPORTED 03/31/88

SAMPLE Soil
RECEIVED 03/21/88

IDENTIFICATION Omega Recovery, Whittier, CA
Project #6715-001

BASED ON SAMPLE As Submitted

Purgeable Organics EPA 8240:	B1-10	B1-25	B1-35
Acetone	56 µg/kg	-----	112 µg/kg
Chloroform	7 µg/kg	10 µg/kg	9 µg/kg
2-Butanone	12 µg/kg	5 µg/kg	6 µg/kg
1,1,1-Trichloroethane	12 µg/kg	54 µg/kg	75 µg/kg
Trichloroethylene	-----	32 µg/kg	42 µg/kg
4-Methyl-2-pentanone	11 µg/kg	-----	-----
Tetrachloroethylene	20 µg/kg	129 µg/kg	257 µg/kg
Toluene	10 µg/kg	5 µg/kg	-----

All other compounds were None Detected. See attached list.

Purgeable Organics EPA 8240:	B2-05	B2-15	B3-20
Methylene chloride	-----	-----	69 µg/kg
Acetone	-----	-----	35 µg/kg
2-Butanone	24 µg/kg	12 µg/kg	11 µg/kg
1,1,1-Trichloroethane	7 µg/kg	9 µg/kg	-----
Trichloroethylene	19 µg/kg	45 µg/kg	-----
Tetrachloroethylene	84 µg/kg	127 µg/kg	5 µg/kg
Toluene	24 µg/kg	8 µg/kg	7 µg/kg

All other compounds were None Detected. See attached list.

ASSOCIATED LABORATORIES

Edward S. Behare, Ph.D.

ESB/ql

Client: ERT
Lab No.: F46347
Date: March 31, 1988

PURGEABLE ORGANICS EPA METHOD 8240:	LIMITS OF DETECTION
Chloromethane	ND< 30.0 µg/kg
Bromomethane	ND< 30.0 µg/kg
Vinyl Chloride	ND< 30.0 µg/kg
Chloroethane	ND< 30.0 µg/kg
Methylene Chloride	ND< 50.0 µg/kg
Acetone	ND< 50.0 µg/kg
Acrolein	ND< 50.0 µg/kg
Acrylonitrile	ND< 50.0 µg/kg
Carbon Disulfide	ND< 5.0 µg/kg
1,1-Dichloroethene	ND< 5.0 µg/kg
1,1-Dichloroethane	ND< 5.0 µg/kg
Trans-1,2-Dichloroethene	ND< 5.0 µg/kg
Tetrahydrofuran	ND< 5.0 µg/kg
Trichlorofluoromethane	ND< 5.0 µg/kg
Freon-TF	ND< 5.0 µg/kg
Ethylene Dibromide	ND< 5.0 µg/kg
1,4-Dioxane	ND< 5.0 µg/kg
1,2-Dibromo-3-Chloropropane	ND< 5.0 µg/kg
Chloroform	ND< 5.0 µg/kg
1,2-Dichloroethane	ND< 50.0 µg/kg
2-Butanone	ND< 5.0 µg/kg
1,1,1-Trichloroethane	ND< 5.0 µg/kg
Carbon Tetrachloride	ND< 30.0 µg/kg
Vinyl Acetate	ND< 5.0 µg/kg
Bromodichloromethane	ND< 5.0 µg/kg
1,1,2,2-Tetrachloroethane	ND< 5.0 µg/kg
1,2-Dichloropropane	ND< 5.0 µg/kg
Trans-1,3-Dichloropropene	ND< 5.0 µg/kg
Trichloroethene	ND< 5.0 µg/kg
Chlorodibromomethane	ND< 5.0 µg/kg
1,1,2-Trichloroethane	ND< 5.0 µg/kg
Benzene	ND< 5.0 µg/kg
Cis-1,3-Dichloropropene	ND< 50.0 µg/kg
2-Chloroethylvinyl Ether	ND< 5.0 µg/kg
Bromoform	ND< 30.0 µg/kg
2-Hexanone	ND< 30.0 µg/kg
4-Methyl-2-Pentanone	ND< 5.0 µg/kg
Tetrachloroethene	ND< 5.0 µg/kg
Toluene	ND< 5.0 µg/kg
Chlorobenzene	ND< 5.0 µg/kg
Ethylbenzene	ND< 5.0 µg/kg
Styrene	ND< 5.0 µg/kg
Total Xylenes	ND< 5.0 µg/kg
M-Chlorotoluene	ND< 5.0 µg/kg
1,3-Dichlorobenzene	ND< 5.0 µg/kg
1,4-Dichlorobenzene	ND< 5.0 µg/kg
1,2-Dichlorobenzene	ND< 5.0 µg/kg

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
Omega Recovery	Whittier, CA
Project No.	**Field Logbook No.**
6715-001	
Sampler: (Signature)	**Chain of Custody Tape No.**
Mark Wood	

ANALYSES: 8240

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample							REMARKS
B1-10	3/19/88	11:45		SOIL	X						
B1-25		12:25									
B1-35		13:40									
B2-05		08:30									
B2-15		09:51									
B3-20		15:35									

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Mark Wood	3/21/88	12:47	Richard Garcia	3/21/88	1241
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature)	Date	Time
Sample Disposal Method:			Disposed of by: (Signature)	Date	Time

SAMPLE COLLECTOR

Environmental Research and Technology, Inc.
696 Virginia Road
Concord, MA 01742
617-369-8910

19782 MacArthur Blvd.
Suite 365
Irvine, California
92715
714-476-0321

ANALYTICAL LABORATORY

ERT

Nº 8299

1974-3-84

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900

CLIENT

ERT
19782 MacArthur Blvd.
Suite 365
Irvine, CA 92715
Attn: Charles Keller

(2013) LAB NO F49575

REPORTED 06/17/88

SAMPLE Soil

RECEIVED 06/13/88

IDENTIFICATION Thomson & Nelson, Whittier CA
Project #6715-002

BASED ON SAMPLE As Submitted

Purgeable Organics EPA 8240:	B-MW-1-55'	B-MW-1-75'
Methylene chloride	2,650 µg/kg	80 µg/kg
Trichlorofluoromethane	156 µg/kg	146 µg/kg
1,1-Dichloroethylene	222 µg/kg	36 µg/kg
1,1-Dichloroethane	19 µg/kg	-----
1,1,1-Trichloroethane	874 µg/kg	74 µg/kg
Trichloroethylene	156 µg/kg	23 µg/kg
Tetrachloroethylene	854 µg/kg	98 µg/kg
1,1,2-trichloro-1,2,2,-trifluoroethane	155 µg/kg	880 µg/kg

All other compounds were None Detected. See attached list.

Purgeable Organics EPA 8240:	B-MW-2-30'	B-MW-2-50'
Methylene chloride	96 µg/kg	141 µg/kg
1,1-Dichloroethylene	12 µg/kg	32 µg/kg
1,1,1-Trichloroethane	23 µg/kg	27 µg/kg
Trichloroethylene	143 µg/kg	350 µg/kg
Tetrachloroethylene	143 µg/kg	266 µg/kg
1,1,2-trichloro-1,2,2,-trifluoroethane	60 µg/kg	436 µg/kg

All other compounds were None Detected. See attached list.

ASSOCIATED LABORATORIES

Edward S. Behare, Ph.D.

ESB/ql

Client: ERT
Lab No.: F49575
Date: June 17, 1988

EPA METHOD 8240:	LIMITS OF DETECTION
Chloromethane	30.0 µg/kg
Bromomethane	30.0 µg/kg
Vinyl Chloride	30.0 µg/kg
Chloroethane	30.0 µg/kg
Methylene Chloride	50.0 µg/kg
Acetone	50.0 µg/kg
Acrolein	50.0 µg/kg
Acrylonitrile	50.0 µg/kg
Carbon Disulfide	5.0 µg/kg
1,1-Dichloroethene	5.0 µg/kg
1,1-Dichloroethane	5.0 µg/kg
Trans-1,2-Dichloroethene	5.0 µg/kg
Tetrahydrofuran	5.0 µg/kg
Trichlorofluoromethane	5.0 µg/kg
Freon-TF	5.0 µg/kg
Ethylene Dibromide	5.0 µg/kg
1,4-Dioxane	5.0 µg/kg
1,2-Dibromo-3-Chloropropane	5.0 µg/kg
Chloroform	5.0 µg/kg
1,2-Dichloroethane	5.0 µg/kg
2-Butanone	50.0 µg/kg
1,1,1-Trichloroethane	5.0 µg/kg
Carbon Tetrachloride	5.0 µg/kg
Vinyl Acetate	30.0 µg/kg
Bromodichloromethane	5.0 µg/kg
1,1,2,2-Tetrachloroethane	5.0 µg/kg
1,2-Dichloropropane	5.0 µg/kg
Trans-1,3-Dichloropropene	5.0 µg/kg
Trichloroethene	5.0 µg/kg
Chlorodibromomethane	5.0 µg/kg
1,1,2-Trichloroethane	5.0 µg/kg
Benzene	5.0 µg/kg
Cis-1,3-Dichloropropene	5.0 µg/kg
2-Chloroethylvinyl Ether	50.0 µg/kg
Bromoform	5.0 µg/kg
2-Hexanone	30.0 µg/kg
4-Methyl-2-Pentanone	30.0 µg/kg
Tetrachloroethene	5.0 µg/kg
Toluene	5.0 µg/kg
Chlorobenzene	5.0 µg/kg
Ethylbenzene	5.0 µg/kg
Styrene	5.0 µg/kg
Total Xylenes	5.0 µg/kg
M-Chlorotoluene	5.0 µg/kg
1,3-Dichlorobenzene	5.0 µg/kg
1,4-Dichlorobenzene	5.0 µg/kg
1,2-Dichlorobenzene	5.0 µg/kg

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
Thunsen & Nelsen	Whittier, CA
Project No.	**Field Logbook No.**
6715-002	
Sampler: (Signature)	**Chain of Custody Tape No.**
Kenneth W. Pitchford, R.G.	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	ANALYSES: 8240	REMARKS
B-MW-1-55'	6/11/88	11:30		SOIL	J	
B-MW-1-75'	6/11/88	13:45		SOIL	J	
B-MW-2-30'	6/11/88	17:30		SOIL	J	
B-MW-2-50'	6/11/88	18:00		SOIL	J	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Kenneth W. Pitchford, R.G.	6/13/88	11:30	Brad G. Stone	6/13/88	11:30
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Brad G. Stone	6/13/88	17:30			
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature)	Date	Time
				6/13/88	17:30
Sample Disposal Method:	Disposed of by: (Signature)			Date	Time

SAMPLE COLLECTOR

Charles Miller
ERT, Inc.
19782 MacArthur Blvd. Suite 305
Irvine, CA 92715
(714) 476-0321

ANALYTICAL LABORATORY

ERT

No.

1974-3-84

ASSOCIATED LABORATORIES
806 North Batavia · Orange, California 92668 · 714/771-6900

CLIENT
ERT
19782 MacArthur Blvd.
Suite 365
Irvine, CA 92715
Attn: Charles Keller

(2013)

LAB NO F49647

REPORTED 06/17/88

RECEIVED 06/15/88

SAMPLE Water

IDENTIFICATION Thomson & Nelson, Whittier CA
Proj. # 6715-001-200
As Submitted

BASED ON SAMPLE

Purgeable Organics EPA 624:

Methylene chloride	650 µg/l
Trichlorofluoromethane	1,540 µg/l
1,1-Dichloroethylene	1,080 µg/l
1,1,1-Trichloroethane	2,080 µg/l
Trichloroethylene	258 µg/l
Tetrachloroethylene	1,030 µg/l
1,1,2-trichloro-1,2,2,-trifluoroethane	5,240 µg/l

All other compounds were None Detected.
See attached list.

ASSOCIATED LABORATORIES

Edward S. Behare, Ph.D.

ESB/ql

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

Client: ERT
Lab No.: F49647
Date: June 17, 1988

EPA METHOD 8240:	LIMITS OF DETECTION
Chloromethane	30.0 µg/kg
Bromomethane	30.0 µg/kg
Vinyl Chloride	30.0 µg/kg
Chloroethane	30.0 µg/kg
Methylene Chloride	50.0 µg/kg
Acetone	50.0 µg/kg
Acrolein	50.0 µg/kg
Acrylonitrile	50.0 µg/kg
Carbon Disulfide	5.0 µg/kg
1,1-Dichloroethene	5.0 µg/kg
1,1-Dichloroethane	5.0 µg/kg
Trans-1,2-Dichloroethene	5.0 µg/kg
Tetrahydrofuran	5.0 µg/kg
Trichlorofluoromethane	5.0 µg/kg
Freon-TF	5.0 µg/kg
Ethylene Dibromide	5.0 µg/kg
1,4-Dioxane	5.0 µg/kg
1,2-Dibromo-3-Chloropropane	5.0 µg/kg
Chloroform	5.0 µg/kg
1,2-Dichloroethane	5.0 µg/kg
2-Butanone	50.0 µg/kg
1,1,1-Trichloroethane	5.0 µg/kg
Carbon Tetrachloride	5.0 µg/kg
Vinyl Acetate	30.0 µg/kg
Bromodichloromethane	5.0 µg/kg
1,1,2,2-Tetrachloroethane	5.0 µg/kg
1,2-Dichloropropane	5.0 µg/kg
Trans-1,3-Dichloropropene	5.0 µg/kg
Trichloroethene	5.0 µg/kg
Chlorodibromomethane	5.0 µg/kg
1,1,2-Trichloroethane	5.0 µg/kg
Benzene	5.0 µg/kg
Cis-1,3-Dichloropropene	5.0 µg/kg
2-Chloroethylvinyl Ether	50.0 µg/kg
Bromoform	5.0 µg/kg
2-Hexanone	30.0 µg/kg
4-Methyl-2-Pentanone	30.0 µg/kg
Tetrachloroethene	5.0 µg/kg
Toluene	5.0 µg/kg
Chlorobenzene	5.0 µg/kg
Ethylbenzene	5.0 µg/kg
Styrene	5.0 µg/kg
Total Xylenes	5.0 µg/kg
M-Chlorotoluene	5.0 µg/kg
1,3-Dichlorobenzene	5.0 µg/kg
1,4-Dichlorobenzene	5.0 µg/kg
1,2-Dichlorobenzene	5.0 µg/kg

CHAIN OF CUSTODY RECORD

~~1938xx~~

ent/Project Name: Thomson & Nelson

Project Location: Whittier, CA

oject No.: 6715-001-200

Field Logbook No.:

mpler: (Signature) M. Wood

Chain of Custody Tape No.:

ANALYSES: EPA 624

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample							REMARKS
MW-1	6/14/88	18:30		water	X						silty

elinquished by: (Signature) Mark Wood	Date 6/14/88	Time 19:45	Received by: (Signature) Charles Hill	Date 6/14/88	Time 715
elinquished by: (Signature) Charles Hill	Date 6/15/88	Time 8:24AM	Received by: (Signature) Richard Evans	Date 6/15/88	Time 8:24 AM
Relinquished by: (Signature) Richard Evans	Date 6/15/88	Time 9:17	Received for Laboratory: (Signature) C. Pham	Date 6/15/88	Time 1116
Sample Disposal Method:	Disposed of by: (Signature)			Date	Time

SAMPLE COLLECTOR

Environmental Research and Technology, Inc.
19782 Mac Arthur Blvd.
Suite 365
Irvine, California 92715
714-476-0321

ANALYTICAL LABORATORY

ERT

Nº 8810

3-84

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900

RECEIVED
JUN 22 1988

CLIENT

ERT
19782 MacArthur Blvd.
Suite 365
Irvine, CA 92715
Attn: Charles Keller

(2013)

LAB NO F49765

REPORTED 06/21/88

SAMPLE Water

RECEIVED 06/17/88

IDENTIFICATION Thomson & Nelson, Whittier CA
Proj. # 6715-001-200, MW-1

BASED ON SAMPLE As Submitted

Purgeable Organics EPA 624:

Methylene chloride	260 µg/l
Trichlorofluoromethane	1,718 µg/l
1,1-Dichloroethylene	836 µg/l
trans-1,2-Dichloroethylene	9 µg/l
Chloroform	24 µg/l
1,1,1-Trichloroethane	2,150 µg/l
Trichloroethylene	160 µg/l
Tetrachloroethylene	667 µg/l

All other compounds were None Detected.
See attached list.

ASSOCIATED LABORATORIES

Edward S. Behare, Ph.D.

ESB/ql

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

Client: ERT
Lab No.: F49765
Date: June 21, 1988

EPA METHOD 624:	LIMITS OF DETECTION
2-Propanone	5.0 µg/l
Dichloromethane	5.0 µg/l
1,1-Dichloroethene	0.2 µg/l
1,1-Dichloroethane	1.0 µg/l
Chloroform	1.0 µg/l
Trans-1,2-dichloroethene	1.0 µg/l
1,2-Dichloroethane	1.0 µg/l
Bromomethane	1.0 µg/l
Chloromethane	1.0 µg/l
Vinyl chloride	2.0 µg/l
Trichlorofluoromethane	1.0 µg/l
Chloroethane	5.0 µg/l
Dichlorodifluoromethane	5.0 µg/l
2-Butanone	5.0 µg/l
Tetrachloromethane	5.0 µg/l
1,2-Dichloropropane	5.0 µg/l
Trichloroethene	1.0 µg/l
Bromodichloromethane	1.0 µg/l
1,1,2-Trichloroethane	1.0 µg/l
2-Chloroethylvinyl ether	5.0 µg/l
1,1,1-Trichloroethane	5.0 µg/l
Dibromochloromethane	1.0 µg/l
Trans-1,3-dichloropropene	1.0 µg/l
Bromoform	1.0 µg/l
Benzene	0.5 µg/l
Cis-1,3-dichloropropene	1.0 µg/l
Tetrachloroethene	1.0 µg/l
Chlorobenzene	1.0 µg/l
1,1,2,2-tetrachloroethene	1.0 µg/l
Methyl benzene	1.0 µg/l
Ethyl benzene	1.0 µg/l
1,4-Dichlorobenzene	5.0 µg/l
1,3-Dichlorobenzene	5.0 µg/l
1,2-Dichlorobenzene	5.0 µg/l
Styrene	5.0 µg/l
1,3-Dimethyl benzene	1.0 µg/l
1,4-Dimethyl benzene	1.0 µg/l
1,2-Dimethyl benzene	1.0 µg/l

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
Thomson & Nelson	Whittier, CA
Project No.	**Field Logbook No.**
6715-001-200	
Sampler: (Signature)	**Chain of Custody Tape No.**
Mark Wood	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	EPA-624						REMARKS
MW-1	6/16/88	8:30		Water	X						
~~MW-1~~	~~6/16/88~~	~~8:30~~			X						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Mark Wood	6/17/88	13:00			
Relinquished by: (Signature)	**Date**	**Time**	**Received by: (Signature)**	**Date**	**Time**
Relinquished by: (Signature)	**Date**	**Time**	**Received for Laboratory: (Signature)**	**Date**	**Time**
Sample Disposal Method:	**Disposed of by: (Signature)**			**Date**	**Time**

SAMPLE COLLECTOR

Environmental Research and Technology, Inc.
~~2625 Virginia Road~~ 19782 Mac Arthur Blvd.
~~Thousand Oaks, CA 91362~~ Suite 365
~~805-498-8910~~ Irvine, California 92715
714-476-0321

ANALYTICAL LABORATORY

ERT

No. 8809

3-84

Chemical Research Laboratories, Inc.
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-4370 • (213) 598-0458

RECEIVED
JUL 14 1988
ERT-IRVINE

July 13, 1988

ERT
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: Daniel Oliver

ANALYSIS NO.: 817414-001
ANALYSES: EPA Method 624
DATE SAMPLED: 06/21/88
DATE SAMPLE REC'D: 06/22/88
PROJECT: 6715-003-300
Thomson & Nelson
Whittier, CA

Enclosed with this letter is the report on the chemical and physical analysis on the sample from ANALYSIS NO: 817414-001 shown above.

The sample was received by CRL in a chilled state, intact, and with the chain-of-custody record attached.

Please note that ND( ) means not detected at the detection limit expres within the parentheses.

Jerel Kimble
REVIEWED

APPROVED

Chemical Research Laboratories, Inc.
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458

LABORATORY REPORT

ERT
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: Daniel Oliver

SAMPLE ID.: MW-1

ANALYSIS NO.: 817414-001
ANALYSES: EPA Method 624
DATE SAMPLED: 06/21/88
DATE SAMPLE REC'D: 06/22/88
DATE ANALYZED: 07/08/88
SAMPLE TYPE: Liquid
PROJECT: 6715-003-300
Thomson & Nelson
Whittier, CA

EPA METHODS 624/8240 VOLATILE ORGANICS

	(ug/L)		(ug/L)
Chloromethane	ND(100.)	1,2-Dichloropropane	ND(50.)
Bromomethane	ND(100.)	Trans-1,3-Dichloropropene	ND(50.)
Vinyl Chloride	ND(100.)	Trichloroethene	120.
Chloroethane	ND(100.)	Dibromochloromethane	ND(50.)
Methylene Chloride	280.	1,1,2-Trichloroethane	ND(50.)
Acetone	160.	Benzene	ND(50.)
Carbon Disulfide	ND(50.)	cis-1,3-Dichloropropene	ND(50.)
1,1-Dichloroethene	510.	2-Chloroethylvinyl ether	ND(100.)
1,1-Dichloroethane	ND(50.)	Bromoform	ND(50.)
Trans-1,2-Dichloroethene	ND(50.)	4-Methyl-2-Pentanone	ND(100.)
Chloroform	ND(50.)	2-Hexanone	ND(100.)
1,2-Dichloroethane	ND(50.)	Tetrachloroethene	510.
2-Butanone	ND(100.)	1,1,2,2-Tetrachloroethane	ND(50.)
1,1,1-Trichloroethane	2,200.	Toluene	ND(50.)
Carbon Tetrachloride	ND(50.)	Chlorobenzene	ND(50.)
Vinyl Acetate	ND(100.)	Ethylbenzene	ND(50.)
Bromodichloromethane	ND(50.)	Styrene	ND(50.)
		Total Xylenes	ND(50.)

Chemical Research Laboratories, Inc.
7440 Lincoln Way • Garden Grove, CA 92641
(714) 898-6370 • (213) 598-0458

LABORATORY REPORT

ERT
19782 MacArthur Blvd., Suite 365
Irvine, CA 92715
ATTN: Daniel Oliver

ANALYSIS NO.: 817414-001
ANALYSES: EPA Method 624
DATE SAMPLED: 06/21/88
DATE SAMPLE REC'D: 06/22/88
PROJECT: 6715-003-300
Thomson & Nelson
Whittier, CA

QA/QC SUMMARY

Date	Parameter(method)	Average Matrix Spike Recovery%	Acceptable Range%	Relative Percent Difference	Acceptable Range%
07/08/88	1,1-Dichloroethene (EPA 624)	67	61-145	6	14
07/08/88	Chlorobenzene (EPA 624)	79	75-130	5	13

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSES
THOMSON & NELSON	WHITTIER, CA	
Project No.	**Field Logbook No.**	
6715-003-300		
Sampler: (Signature)	**Chain of Custody Tape No.**	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	EPA 624						REMARKS
MW-1	6/21/88	6:45		WATER	X						

	Date	Time		Date	Time
Relinquished by: (Signature) Mark Wood	6/22/88	17:00	Received by: (Signature)	6/22/88	4:35 PM
Relinquished by: (Signature)	6/22/88	5:30 PM	Received by: (Signature)		
Relinquished by: (Signature)			Received for Laboratory: (Signature)	6/22/88	5:40 PM
Sample Disposal Method:			Disposed of by: (Signature)		

SAMPLE COLLECTOR

Environmental Research and Technology, Inc.
19782 Mac Arthur Blvd.
Suite 365
Irvine, California 92715
714-476-0321

ANALYTICAL LABORATORY

1½ HR T.T.

ERT

Nº 8808

1974-3-84

Appendix E

Ecology and Environment, Inc. Preliminary Assessment

PRELIMINARY ASSESSMENT

TO: Paul La Courreye, Site Screening Coordinator, EPA Region IX

THROUGH: Jim James, Ecology and Environment, Inc. dtc for Jim James

PREPARED BY: Karen L. Johnson, Ecology and Environment, Inc.

DATE: May 11, 1989

SITE: Omega Chemical Corporation
12504 East Whittier Boulevard
Whittier, California 90602
Los Angeles County

TDD#: F9-8902-023

EPA ID#: CAD042245001

PAN: FCA1193RAA

cc: FIT Master file
Chris Lichens, Ecology and Environment, Inc.
Karen Schwinn, EPA Region IX

1. INTRODUCTION

As part of the United States Environmental Protection Agency's (EPA) Environmental Priorities Initiative (EPI) program, EPA has requested Ecology and Environment's Field Investigation Team to conduct a Preliminary Assessment of Omega Chemical Corporation in Whittier, California.

The EPI program integrates the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) in order to set priorities for clean up of the most environmentally significant sites first. The Preliminary Assessment (PA) uses CERCLA Hazard Ranking System (HRS) criteria to determine the site's eligibility for the National Priorities List (NPL), and thus is used to prioritize facilities for the RCRA program.

2. SITE DESCRIPTION

Omega Chemical Corporation (Omega) is located at 12504 East Whittier Boulevard, in the City of Whittier, Los Angeles County, California 90602 (see Figure 2-1). It falls within Township 2 S., Range 11 W., Section 28 of the San Bernardino Base Meridian (1). The facility at present covers approximately 20,000 square feet, although the company hopes to double its size by expanding onto property to the north of the facility in the near future (see Figure 2-2) (2).

The primary business of Omega is recycling spent organic chemicals to purity specifications appropriate for reuse. Omega also reduces the quantity and toxicity of some wastes that cannot be effectively recycled. It uses a variety of chemical, thermal, and physical treatment processes to accomplish these goals (see Table 2-1) (3).

Although Omega is permitted to treat a wide variety of hazardous wastes, it primarily recycles spent chlorinated hydrocarbons and chlorinated fluorocarbons (4). Under 40 CFR 261.2(c), most of the spent materials brought to Omega for recycling are considered hazardous wastes prior to treatment. Once the material has been returned to a usable form (a spent solvent distilled and able to be used as a solvent again), it is no longer considered a waste (28). However, the materials sent from Omega to other treatment and disposal facilities for further processing or use as fuels are still considered hazardous wastes.

Prior to 1984, Omega sent approximately 120 tons per year of residual wastes generated in treatment processes to the BKK Class I landfill for disposal (5). Since the Hazardous Solid Waste Act (HSWA) amendments to RCRA passed in 1984, which restricted the landfill disposal of hazardous wastes, Omega's treatment and disposal practices have changed. Omega now treats cleaning solvents such as acetone and paint thinner, although they are not recycled because of their low resale value (4). At present, no wastes generated at Omega are sent to landfills for disposal. All of Omega's wastes are sent to other facilities that use them for fuel (Systex of Mt. View, CA EPA ID# CAD981979164) or that perform further resource reclamation (Rollins of Deer Park, TX, EPA ID# TXD055141378; and others) (4).

Prior to 1963, a company called Sierra Bullets, Inc. was located on-site. The exact nature of its operation is unknown, but reportedly it stored kerosene in the underground storage tank that was removed from the site in 1987. Fred R. Rippy bought the land in 1963. Between 1966 and 1971, a business that converted vans to ambulances operated on the site. Omega began operating at its present location in 1976, when it bought out Bachelor Chemical Processing, a business similar to Omega that was at this location for about five years. Omega leased the land from Fred R. Rippy until it bought the land in 1987 (6).

3. APPARENT PROBLEM

Omega processes used or contaminated chemical wastes generated off-site for reuse, use as fuel, or disposal. Hazardous waste operations on-site include waste treatment units, drum storage areas, and above-ground

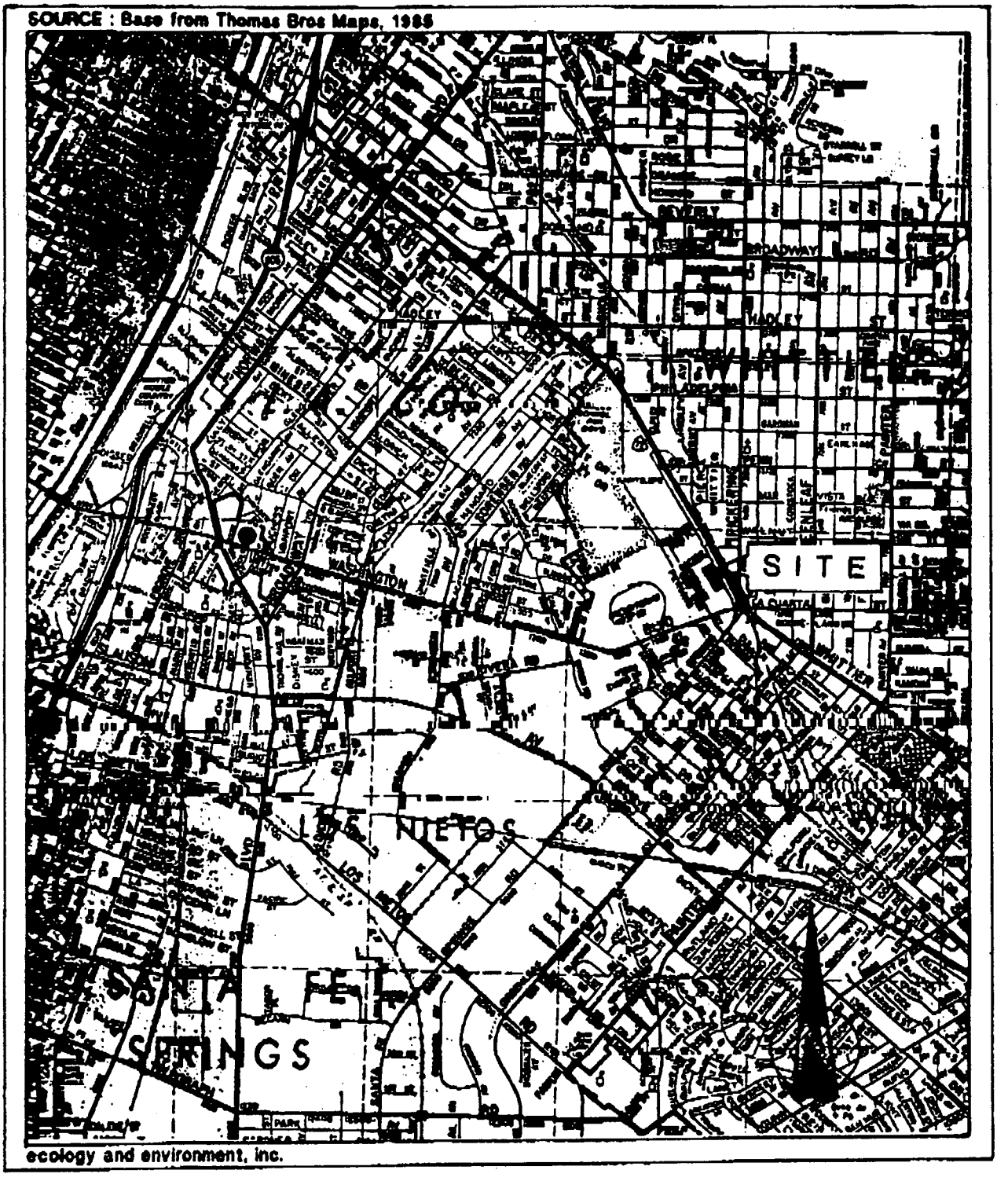


Figure 2-1 SITE LOCATION MAP
OMEGA CHEMICAL CORPORATION
12504 WHITTIER BLVD.
WHITTIER, CA

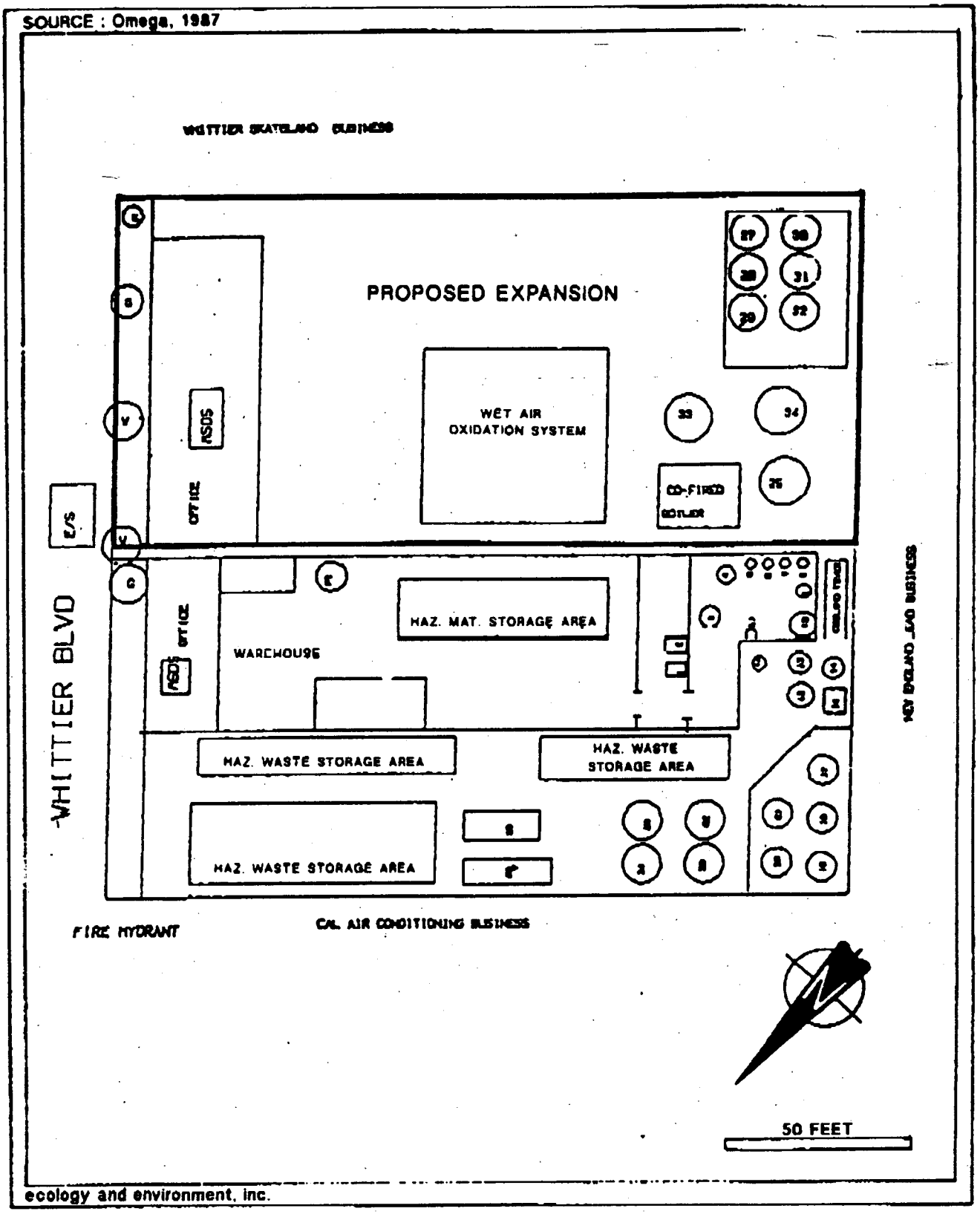


Figure 2-2 FACILITY MAP
OMEGA CHEMICAL CORPORATION
12504 WHITTIER BLVD.
WHITTIER, CA

Table 2-1

TREATMENT PROCESSES PERFORMED AT OMEGA CHEMICAL CORPORATION

Treatment Code	Process	Description	Design Capacity*
T04	pH modification	Ionization of acids and bases	2000 gpd
T05	Reactions	Acid-Base, substitution, Addition-elimination, and Oxidation and Reduction	2000 gpd
T06	Thermal Treatment	Used as fuels in our industrial boilers	0.5 tph
T07	Low Temperature Oxidation	Utilizes temperature and pressure to break down hazardous organics to carbon dioxide and water	20,000 gpd
T08	Dewatering/drying	Pumps liquid through a drying agent such as a molecular sieve polymer or calcium chloride granules	2000 gpd
T09	Distillation	Separate out solvents of varying boiling points	9000 gpd
T10	Evaporation	Wiped Film Evaporation is used on heavily contaminated materials; or a special heated open-top tank is used on aqueous waste solutions that contain no volatile components	3000 gpd
T11	Solidification/ Stabilization	With a solidification material similar to cement dust or diatomaceous coagulant	2000 gpd
T12	Fuel Production	Proper blending and adjustment, and made available to certain approved facilities for burning	50 tpd

Source: O'Meara, 1987.

*gpd = gallons per day
tph = tons per hour
tpd = tons per day

storage tanks for both pretreated wastes and recycled products. One underground storage tank was removed from the site in 1987. Reportedly, the tank had not been used by any of the businesses on-site since at least 1963, however soil contaminated with 1,1,1-trichloroethane, tetrachloroethylene, and other volatile organic compounds was found beneath the tank (6). Wastes generated on-site include still bottoms and other residuals from the treatment processes, and rainwater and rinse water collected in an on-site sump. The facility also stores wastes generated off-site prior to processing. On occasion, they act as a transfer facility, merely repackaging wastes from one generator for proper disposal or treatment at another facility. No permitted waste disposal activities occur on-site.

The California Department of Health Services (DOHS) issued an Interim Status Document (ISD) to Omega in October 1981 permitting the facility to operate as a hazardous waste treatment and storage facility (7). Several inspections of the site have been performed by DOHS to determine compliance with the ISD, and many violations have been noted. Many of these violations have been administrative, such as the lack of a contingency or closure plan (5, 8); however, some of the violations revealed problems that could potentially lead to off-site contamination (9,10,27). One inspector described the Omega operations as "sloppy" (11).

In April 1985, a DOHS ISD compliance inspection determined that ground beneath the tank storage area had been covered with asphalt, which is not impervious to solvents and can allow wastes migration (9). Part of the asphalt base had deteriorated, and Omega was directed to remove and dispose of any contaminated soil from the area and to replace the asphalt with an impervious concrete base. An investigation conducted for Omega by Leroy Crandall and Associates determined that the asphaltic materials in the south end of the tank farm were soft and decomposed, and that the soils beneath and immediately south of the tank farm were contaminated with volatile organic compounds (12).

Boring #1, one foot north from the south corner of the tank farm, showed that methylene chloride was present down to 3.5 feet and tetrachloroethylene (PCE) was present down to 7 feet (see Table 3-1). Trichloroethylene (TCE), 1,1,1-trichloroethane (TCA), methylene chloride, and PCE were also found in the first foot of Boring #2, northwest of Boring #1. Boring #5, located about three feet southeast of the tank farm area, found these four chemicals and 1,2-dichloroethane at the one-foot level. PCE was detected in decreasing amounts down to seven feet in Boring #5 (12).

In addition to the citation for not having an impervious base, Omega was also cited several times for storing wastes in open or leaking drums, improperly labeling drums, and having inadequate aisle space to allow for periodic inspections or movement of emergency equipment (9,10,27).

In August 1987, Omega removed and disposed of a 500-gallon underground storage tank. Although the tank was manufactured in 1956, it supposedly had not been used since the property was purchased by Fred R. Rippy in 1963 (6). When the tank was removed, it was found to be heavily

Table 3-1

CONCENTRATIONS OF COMPOUNDS FOUND
DURING TANK FARM SUBSURFACE SOIL INVESTIGATION
AT OMEGA CHEMICAL CORPORATION (12)

Sample	1,1,1-Trichloro-ethane ppm	Methylene Chloride ppm	Trichloro-ethylene ppm	Tetrachloro-ethylene ppm	1,2-Dichloro-ethane ppm
Boring 1-1 Ft.	ND	2.89	ND	30.1	NA
Boring 1-1.25 Ft.	ND	1000.	ND	1201.	NA
Boring 1-3.5 Ft.	ND	9.73	ND	89.0	NA
Boring 1-7 Ft.	ND	ND	ND	0.18	ND
Boring 1-8.5 Ft.	ND	ND	ND	ND	ND
Boring 2-1 Ft.	75.1	8.28	29.4	9.55	NA
Boring 2-3.5 to 4.0 Ft.	ND	ND	ND	ND	NA
Boring 3-1 Ft.	ND	ND	ND	ND	NA
Boring 4-1 Ft.	ND	ND	ND	ND	NA
Boring 5-1 Ft.	848.	4.49	358.	2064.	25.
Boring 5-3 Ft.	ND	ND	ND	0.69	ND
Boring 5-5 Ft.	ND	ND	ND	0.29	ND
Boring 5-7 Ft.	ND	ND	ND	0.19	ND

ND = not detected, detection limit is 0.10 ppm
NA = not analyzed

corroded around the top, and contained residual liquid and sludge in the bottom. Several volatile and aromatic organic compounds were found in the liquid. TCA was the only organic compound detected in the sludge. Soil samples collected at two and four foot intervals beneath the tank contained several volatile organic compounds (see Table 3-2). Concentrations were considerably higher in the four foot interval than in the two foot interval (6). No deeper samples were collected.

Omega received a Corrective Action Order from DOHS in 1988 requiring the facility to install an impervious base under its waste storage area. As of April 1989, 90 percent of the facility has been covered with concrete. Once the tanks in the tank farm are emptied so that they can be moved, probably within one or two months, the task will be completed (4). In January 1989, Omega filed a notice of intent to expand operations to adjoining property of equal size (2). This new area already has a concrete base and a one to two foot cinder block containment dike around the outer edge of the facility (13).

Table 3-2

CONCENTRATIONS OF COMPOUNDS FOUND
DURING REMOVAL OF UNDERGROUND STORAGE TANK
AT OMEGA CHEMICAL CORPORATION (6)

Compound	Sample 1 10 feet below land surface (mg/kg)	Sample 2 12 feet below land surface (mg/kg)
Total Petroleum Hydrocarbon	11	300
Benzene	ND	ND
Toluene	ND	0.4
Ethyl Benzene	ND	0.3
Total Xylenes	ND	0.4
1,1,1-Trichloroethane	ND	4.0
Tetrachloroethylene (PCE)	0.24	2.7
Methylene Chloride	ND	1.3
1,1-Dichloroethane	ND	0.12
Acetone	0.05	13.8

ND = not detected

4. HRS FACTORS

4.1 Observed Release

There has been no observed release of hazardous materials to groundwater from this site. Soil contamination was detected beneath an underground tank that has been removed. Several volatile organic compounds were detected in samples four feet below the tank (12 feet below grade) (6). Two feet above these samples, contaminant levels were considerably lower. Soil contamination has also been found beneath the tank farm area, which had a corroding, nonimpervious base (12). The potential for an observed release to groundwater is moderately low due to a moderate depth to groundwater, low net precipitation, and moderate to low permeability.

There has been no observed release of hazardous materials to surface water. Surface water containment appears adequate to hold most minor spills or runoff from the site (13). Rainwater from the site is collected in a sump and analyzed before being discharged to the sewer (4). However, there is no back-up collection system (4). There are no surface water targets that would be affected by a release of contaminants from this site (21).

No observed release of hazardous materials to air has been documented from the facility. During the FIT site drive-by, a solvent-like odor could be smelled from the northeast side of the property (13). Due to the volatile nature of the chemicals on-site and the facility's record for "sloppy" housekeeping, it is possible that an observed release of hazardous materials to air may be documented.

4.2 Direct Contact/Fire and Explosion

Direct contact to hazardous wastes could occur to anyone entering the Omega facility. Omega has been cited for violations involving the improper maintenence of the drums stored on-site (9,10). There is a fence surrounding the facility, but it is only approximately four feet high along the northeast property line. A single strand of barbed-wire along the top of the fence would only slightly discourage a trespasser (13). The west gate to the facility is open and unguarded during the day. Warning signs in both English and Spanish are posted around the facility.

Many flammable and heat sensitive chemicals are stored on-site (27). In 1981, resins in the still bottom of a distillation unit treating TCA exploded and rocketed the top distillation plates to the frontage road in front of the site. One employee was injured, but not severely. A DOHS inspection conducted in 1987 cited the facility for not having a system to deliver an adequate water supply in the event of a fire or other emergency (27). They also do not have sufficient aisle space between stacks of drums to allow for emergency equipment mobilization

(9,10,27). The Los Angeles County Fire Department has no current inspection reports or violation notices on the site.

4.3 Waste Type/Quantity

Omega listed a wide variety of hazardous waste types on its Part A Hazardous Waste Permit Application (See Tables 4-1 and 4-2). The primary wastes handled at Omega are spent chlorinated hydrocarbons and chlorinated fluorocarbons (4). Wastes generated on-site include still bottoms and other residuals from the treatment processes, and rain water and rinse water collected in an on-site sump. The facility also stores wastes generated off-site prior to processing. On occassion, they act as a transfer facility, merely repackaging wastes from one generator for proper disposal or treatment at another. Arsenic pentoxide, considered an extremely hazardous waste, was sent from Omega to an off-site treatment, storage, and disposal facility in 1986 (14). The arsenic pentoxide was not treated at Omega, but rather Omega may have acted as an intermediary transfer facility for the waste (15). Since HSWA passed in 1984, they also accept cleaning solvents such as acetone and paint thinner, but generally do not recycle these products because of their low resale value (4).

There are five 5000-gallon tanks on-site contained within a three- to four-foot high concrete block wall. The area of decomposed asphalt where soil contamination was discovered is in the south end of this tank farm (12). The underground storage tank removed in 1987 had a 500-gallon capacity (6).

In its closure plan, Omega estimates the maximum inventory of wastes in storage or in treatment at any given time during the life of the facility to be 780,000 pounds, principally organic liquids (5). Tables 3-1 and 3-2, derived from Omega's Part A amendment (3), estimates the annual quantities of wastes handled.

~2,000 DRUMS

4.4 Groundwater

The Omega site is located in the Whittier area of the Central Basin hydrologic area (16). The upper Pleistocene Lakewood formation crops out in the area of the site. It consists of continental deposits of late Pleistocene age and includes the Artesia and Gage aquifers and possibly portions of the Bellflower aquiclude. To the west of the site, within one to two miles, the sand and gravel Gaspur aquifer extends to a depth of about 145 feet. The San Pedro formation, composed of interbedded layers of sand, gravel, and clay of marine origin, underlies the entire Whittier area and includes the Lynwood, Siverado, and Sunnyside aquifers (16).

The Bellflower aquiclude is a misnomer. Although it consists of clay and sandy clay, it may be either absent in areas or so thin and discontinuous that groundwater and contaminants can be transmitted through it at an appreciable rate (16). Permeability data for this area is scarce, but based on data for the same formations in other areas of

Table 4-1

HAZARDOUS WASTES HANDLED AT
OMEGA CHEMICAL CORPORATION

(using waste codes from 40 CFR 261)

EPA Hazard No.	Description	Annual Quantity Handled
D001	Ignitable Waste (Organic Liquids)	1,200,000 gal.
D002	Corrosive Waste	720,000 gal.
D003	Reactive Waste	60,000 gal.
D004	Arsenic Containing Waste	24,000 lbs.
D005	Barium Containing Waste	24,000 lbs.
D006	Cadmium Containing Waste	24,000 lbs.
D007	Chromium Containing Waste	24,000 lbs.
D008	Lead Containing Waste	24,000 lbs.
D009	Mercury Containing Waste	24,000 lbs.
D010	Selenium Containing Waste	24,000 lbs.
D011	Silver Containing Waste	24,000 lbs.
D012	Endrin Containing Waste	24,000 lbs.
D013	Lindane Containing Waste	24,000 lbs.
D014	Methoxychlor Containing Waste	24,000 lbs.
D015	Toxaphene Containing Waste	24,000 lbs.
D016	2,4-D Containing Waste	24,000 lbs.
D017	2,4,5-TP Silvex Containing Waste	24,000 lbs.
F001	Spent halogenated solvents used in degreasing	1,200,000 gal.
F002	Spent halogenated solvents	1,200,000 gal.
F003	Spent non-halogenated solvents	600,000 gal.
F005	Spent non-halogenated solvents	600,000 gal.
F006	Wastewater treatment sludges	5,400,000 gal.
F007	Spent Cyanide solutions	120,000 gal.
F008	Plating Bath Sludges	120,000 gal.
F009	Spent Stripping Solutions	120,000 gal.
F010	Quenching Solutions	120,000 gal.
F011	Spent Cyanide Solutions	120,000 gal.
F012	Quenching Wastewater Solutions	120,000 gal.
F019	Wastewater Treatment Sludges	3,600,000 gal.
F020	Waste from the manufacturing/use of pesticide derivatives	120,000 gal.
F021	Wastes from the manufacturing/use of pentachlorophenol and intermediates and derivatives	120,000 gal.
F022	Wastes from the manufacturing/use of tetra-, penta-, or hexachlorobenzenes.	60,000 gal.
F027	Wastes and discarded pesticides formulations	60,000 gal.

F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F021, F022, F023, F026, and F027.	480,000 lbs.
K001	Wastes from wood processing processes	60,000 gal.
K002 to K008	Wastes from inorganic pigments processing	60,000 gal.
K009 to K030 and K094,K095,K096 K083,K085,K103, K104,K105	Wastes from organic chemical processing/uses	60,000 gal.
K031 to K043 and K097,K098	Wastes from the manufacturing/use of pesticides	60,000 gal.
K048 to K052	Wastes from the petroleum refining processes and uses	1,200,000 gal.
K062	Wastes from steel finishing operations	60,000 gal.
K086	Wastes from ink formulation and processing uses	60,000 gal.
K084,K101,K102	Wastes from veterinary pharmaceuticals manufacturing/uses	60,000 gal.
P001 to P122	Wastes containing any of the P series	600,000 gal.

Source: O'Meara, 1987

Table 4-2

HAZARDOUS WASTES HANDLED AT
OMEGA CHEMICAL CORPORATION

(using CA waste codes from DHS 8022a)

EPA Hazard No.	Description	Annual Quantity Handled
113	Unspecified acid solution	60,000 gal.
123	Unspecified alkaline solution	60,000 gal.
133	Aqueous solution with total organic residues 10% or more	60,000 gal.
134	Aqueous solution with total organic residues 10% or less	60,000 gal.
181	Other inorganic solid waste	60,000 gal.
211	Halogenated solvents	600,000 gal.
212	Oxygenated solvents	600,000 gal.
213	Hydrocarbon solvent	600,000 gal.
214	Unspecified solvent mixture	600,000 gal.
221	Waste Oil and mixed oil	1,200,000 gal.
241	Tank Bottom Waste	1,200,000 gal.
251	Still Bottoms with halogenated organics	600,000 gal.
252	Other still bottom waste	60,000 gal.
272	Polymeric resin waste	120,000 gal.
311	Pharmaceutical waste	120,000 gal.
331	Off specification, aged or surplus organics	120,000 gal.
341	Organic liquids with halogens	60,000 gal.
343	Unspecified organic liquid mixture	60,000 gal.
351	Organic solids with halogens	60,000 gal.
352	Other organic solids	60,000 gal.
451	Degreasing sludge	60,000 gal.
461	Paint sludge	600,000 gal.
491	Unspecified sludge waste	120,000 gal.
541	Photochemicals/photoprocessing waste	60,000 gal.
561	Detergent and soap	60,000 gal.
741	Liquids with halogenated organic compounds > 1000 Mg./L	60,000 gal.
751	Solids or sludges with halogenated organic > 1000 Mg./L	60,000 gal.

Source: O'Meara, 1987

the Central Basin, the permeability rates are probably greater than 10^{-7} centimeters per second (17).

The net seasonal precipitation of the Whittier area is approximately 0 inches per year (18). Recharge of the Central Basin occurs primarily as a result of the spreading and injection of storm water runoff, imported water and reclaimed water, rather than the infiltration of precipitation (19).

The depth to groundwater at the site was estimated to be 56 feet below land surface, based on data from Los Angeles County Flood Control District wells (6). A hydrograph of well 3S/11W-6P2 shows a water-level high of 77 feet below land surface, with a seasonal variation of about eight feet (19).

Eighteen wells, belonging to eight municipal water supply companies, are located within a three-mile radius of the site (19). The City of Santa Fe Springs has three wells between one and two miles from the site: 2S/11W-30R3, 2S/12W-25Q5, and 3S/11W-6D3. All of the wells feed into the main distribution system that serves a resident population of around 10,000 and a workforce population of around 100,000 (20). The wells draw water from the Lynwood, Silverado, and Sunnyside aquifers.

There has been no observed release of hazardous wastes to groundwater from this site. Based on the above hydrogeologic information, there is no barrier to prevent contaminants in the soil from migrating to the drinking water aquifers, but that may be a slow process. Some contamination has already entered the soil beneath an old underground storage tank and under the tank farm as a result of the decomposition of part of the old asphalt base. A new concrete base may prevent additional soil contamination and may make the potential for an observed release of contaminants to groundwater low.

4.5 Surface Water

The only potential use for surface water from this site before it enters the Pacific Ocean is as recharge for the groundwater (21). The slope of the Omega facility dips to the rear of the site at less than one half of one percent (1). The sides and rear of the Omega facility appear to be surrounded by a one to two foot block wall that prevents surface runoff of contaminants from the site (13). Should there be a breach in this containment, surface water from the site would enter a storm drain that flows into the Sorensen Avenue Drain. This drain proceeds to the North Fork of Coyote Creek. Surface water within three miles of the site is not used for any purpose.

There has been no observed release of hazardous wastes to surface water from the site. In 1984, DOHS received a complaint that the facility was possibly discharging a yellowish liquid to the street (22). When the complaint was investigated, no sign of any violation could be observed.

4.6 Air

No observed release of hazardous materials to air has been documented

from the site. Many of the chemicals stored and treated on-site are quite volatile and can easily escape to the air. Most of the storage and treatment process on-site are permitted by the South Coast Air Quality Management District (SCAQMD). Although Omega has not been cited for emissions violations by SCAQMD, they do not have a good record for keeping waste containers closed and sealed (9,10). For this reason, it may be possible to document an observed release of contaminants to air from this site.

SKATING RINK?

4.7 Other HRS Factors

The site is located in a highly urbanized area consisting of residential, commercial and industrial land uses (13). The population of the City of Whittier was 73,601 at the 1980 census (23) and is all within four miles of the site. There are no environmentally sensitive receptors, such as endangered species, critical habitats, or wetlands, within one mile of the site (1).

5. PROPOSED REVISED HRS CONSIDERATIONS

There are no actual or potential environmental impacts to sensitive environments one to two miles from the site (1). The surface water route consists primarily of storm water drainage. There are no human food chain organisms in this route that can potentially be contaminated.

Direct on-site exposure could occur to anyone entering the Omega facility. There is a fence surrounding the facility, but it is only about four feet high along the northeast property line. A single strand of barbed-wire atop the fence would only slightly discourage a trespasser (13). The west gate to the facility is open and unguarded during the day; however, warning signs in both English and Spanish are posted. Omega has been cited for violations involving the improper maintanence of the drums stored on-site (9,10). Improper handling of the wastes has previously resulted in an explosion and air release (15,24). The volatile nature of the chemicals stored and treated on-site, and Omega's record for improper handling of these chemicals, indicate that the potential for both on-site exposure and air release is high.

6. OTHER REGULATORY INVOLVEMENT

The Omega Chemical Corporation's Whittier facility is operating as a hazardous waste treatment and storage facility under an Interim Status Document (ISD) issued by the DOHS in October 1981. Although a Part B Permit Application has been submitted for a full RCRA permit, the application is still pending. The facility is not on the EPA list for permit authorization review for fiscal year 1989 (25).

The ISD permits the facility to store wastes on-site for not more than one year without further approval from the DOHS. The treatment of wastes are to be carried out under controlled conditions to ensure that

violent reactions, extreme heat, or fire do no occur and that toxic or flammable gases and vapors are not discharged to the atmosphere. Certain extremely hazardous wastes, explosives and burning wastes are prohibited from the site (7).

DOHS has conducted several ISD compliance inspections since the ISD was issued. Many violations of the ISD that were cited dealt with administrative problems, such as not having the ISD on file at the office, not having a written waste analysis plan nor a written inspection schedule, having an insufficient emergency contingency plan, and not having an adequate closure plan (5,8). Omega was also cited for several safety violations including the improper storage and labeling of the drums, inadequate safety and alarm systems, and an insufficient emergency water supply system (9,27).

In 1988, DOHS issued two Corrective Action Orders to Omega. One order cited the facility for not demonstrating financial liability for accidental sudden occurrences (26). The other order directed the company to install an impervious base under its waste storage and treatment areas. It is unknown whether Omega has complied with the first order. Ninety percent of the facility has been covered with concrete, and Omega expects to have the work completed within one or two months (4).

A closure report for the removal of one underground storage tank was filed with the Los Angeles County Department of Public Works (LACDPW) in 1987 (6). The tank contained a small amount of contaminated liquid and sludge and the soil underneath the tank was contaminated with several volatile organic compounds. Soil around the tank was excavated and hauled away, although it is not clear if all of the contaminated soil was removed. The highest levels of contamination were found four feet beneath the tank, but no deeper samples were collected. Additional samples could have clarified the vertical extent of contamination. The LACDPW approved the final closure, however, and no action is being taken by the Los Angeles Regional Waster Quality Control Board (29).

7. REMOVAL CONSIDERATIONS

Although the facility appears to be negligent in the proper handling of the hazardous wastes on-site, it does not pose an immediate threat to human health or the environment that requires activation of the EPA's Emergency Response Section.

8. CONCLUSIONS

Omega Chemical Corporation is located at 12504 East Whittier Boulevard, in the City of Whittier, Los Angeles County, California. The primary business at Omega is the recycling of spent chlorinated hydrocarbons and fluorocarbons to purity specifications appropriate for reuse. Hazardous waste operations on-site include the waste treatment units, drum storage areas, and above-ground storage tanks for both pretreated wastes and recycled products.

No permitted waste disposal activities occur on-site. Prior to 1984, Omega sent approximately 120 tons per year of wastes to the BKK Class I landfill for disposal. The Hazardous Solid Waste Act amendments were passed in 1984 restricting the land disposal of hazardous wastes. Since then, Omega stopped sending wastes to landfills for disposal. Presently, all of Omega's wastes are sent to facilities that either use them for fuel or process them for further resource reclamation.

On-site soil has been contaminated from two sources. The asphalt base in the tank farm area in the west corner of the site was not impervious to the type of chemical stored and treated on-site, and deteriorated in one corner. Several volatile organic compounds were found to a depth of at least seven feet below the tank farm and at least three feet east of the containment area. Soil contamination was also detected four feet below an underground storage tank that was removed in 1987. The tank had never been used by Omega, but a residual liquid and sludge containing several volatile organic compounds was present in the tank.

The geohydrologic formations in the Whittier area are the Lakewood and the San Pedro Formations. The Lakewood Formation consists of continental deposits of late Pleistocene age and includes the Artesia and Gage aquifers. Within two miles of the site, the sand and gravel Gaspur aquifer extends to 145 feet. The San Pedro formation is composed of interbedded layers of sand, gravel, and clay of marine origin and includes the Lynwood, Silverado, and Sunnyside aquifers.

The depth to water beneath the site is reported to be 56 feet. The City of Santa Fe Springs has three wells between one and two miles from the site. All of the wells feed into the city's main distribution system that supplies water to a resident population of around 10,000 and a daytime workforce population of around 100,000 people. These wells draw water from the Lynwood, Silverado, and Sunnyside aquifers.

Surface water drainage from the site, if not contained, would enter the storm drain system and flow through the Sorensen Avenue Drain to the North Fork of Coyote Creek. These drainages are only used for flood control.

The facility has been cited for several violations concerning the improper maintanence of its storage containers. This practice may result in high quantities of contaminants being released to the air. A sweet, solvent-like odor could be detected from the property line to the northeast of the site.

The facility has been operating as a Resource Conservation and Recovery Act of 1976 regulated treatment, storage and disposal facility under an Interim Status Document issued in October 1981. The California Department of Health Services has conducted compliance inspections about once per year since then. Several violations -- administrative, safety, and environmental -- have been noted. The major violation has been the lack of an impervious base under the waste storage area. Spilled solvents have deteriorated the asphalt base.

A preliminary Hazard Ranking System (HRS) screening estimate suggests that the site may be eligible for the National Priorities List. There is a lack of adequate containment from the groundwater route, with some evident soil contamination, a high potential for a release of hazardous wastes to air, and a high waste quantity on-site.

9. RECOMMENDATIONS

It appears that Omega Chemical Corporation, in Whittier, California, is eligible for inclusion on the National Priorities List due to the following factors:

- o lack of adequate containment for the groundwater route;
- o high potential for a release of hazardous wastes to air; and
- o high waste quantity.

FIT recommends a Medium Priority RCRA Facility Assessment (RFA) be conducted at Omega Chemical Corporation due to the following factors:

- o lack of impervious base under the waste storage area;
- o improper labeling and handling of waste storage drums;
- o inadequate safety features;
- o inadequate closure plan and financial liability; and
- o Omega has applied for a permit to expand its operation.

EPA CONCURRENCE

	Initial	Date
Low Priority RFA	_____	_____
Medium Priority RFA	_____	_____
High Priority RFA	_____	_____

CONTACT REPORT

AGENCY/AFFILIATION: DOHS - TSCD		
DEPARTMENT: Permitting Section		
ADDRESS/CITY: Burbank		
COUNTY/STATE/ZIP:		
CONTACT(S)	**TITLE**	**PHONE**
1. Gautam Guha		(818) 567-3123
2.		
E & E PERSON MAKING CONTACT: Karen Johnson		**DATE:** 4/13/89
SUBJECT:		
SITE NAME: Omega Chemical Corp.		**EPA ID#:** CAD042245001

Current permit status - has ISD, have submitted ammended part A.

The facility expansion has not been approved. The State Attorney General's Office told Omega NOT to proceed with expansion. I told him they had. I saw tanks and drums on new property. He said that the tanks are empty and that they have been asked to remove the drums. They will move the drums as they get space.

He said that CAO 88/89/06 is the same as a RCRA 3008h letter. Did not know what violation was cited.

He said that last year there was some sort of fire in connection with their collection of household hazardous chemicals. Didnt know much more about it.

Try contacting City Planning Department for information on expansion and household chemical collection.

CONTACT REPORT

AGENCY/AFFILIATION: Omega Chemical Corp.		
DEPARTMENT:		
ADDRESS/CITY:		
COUNTY/STATE/ZIP:		
CONTACT(S)	**TITLE**	**PHONE**
1. Frank Ford	plant manager	(213) 698-0991
2.		
E & E PERSON MAKING CONTACT: Karen Johnson		**DATE:** 4/20/89
SUBJECT: misc info		
SITE NAME: Omega Chemical Corp.		**EPA ID#:** CAD042245001

Although their part A lists all conceivable wastes handled at Omega, their primary activity is the recycling of spent solvents and refridgerents, ie: 1,1,1 TCA, PCE, methylene chloride, and several chlorinated fluorcarbons including the freons R11, R12, R113 and R500. Since the "land Ban" prohibiting landfill disposal of several chemicals, they have also been accepting several cleaning solvents such as acetone and paint thinners for reclamation. Absolutely NO residual wastes are sent to landfills anymore. Omega's wastes are sent on to other facilities for use as a fuel or for further waste recovery. Systek (Mt. View, CA), ENSCO (Little Rock, AR), Rollins (Deer Park, TX), Marine Shale (LA) and a facility in Canada are the Prime recipients of Omegas wastes. He was not able to give me a quantity of waste generated. Business has increased since the 1983 estimate of 120T/yr, but because of the land ban, they are processing more or differently to rduce waste quantity.

Ninety percent of the facility has been paved in concrete. They are waiting to empty the tanks in the tank farm before they can cover that area.

When Dennis O'Meara bought Bachelor Chemicals he changed the name to Omega, but Bachelor on the letterhead for transition purposes. In the last 3 Years, they have phased out the use of the Bachelor name.

CONTACT REPORT

AGENCY/AFFILIATION: Ecology and Environment Inc.		
DEPARTMENT:		
ADDRESS/CITY: San Francisco		
COUNTY/STATE/ZIP:		
CONTACT(S)	**TITLE**	**PHONE**
1. Howard Edwards		
2.		
E & E PERSON MAKING CONTACT: Karen Johnson		**DATE:** 4/20/89
SUBJECT: Former Omega employee		
SITE NAME: Omega Chemical Corp.		**EPA ID#:** CAD042245001

Howard worked for Omega from 85 to 88. Omega bought their present location and the area for expansion during this time.

I asked him if he know about an explosion in 1981. He said an old distaillation unit made of iron was used to treat 1,1,1, - TCA. When the solvent was passed thru, some resin in the still bottom exploded, rocketing the top distillation plates to the frontage road. An employee was burned, but not severly.

Howard said hat they did not make discharges to sewer or storm drains and he was hard pressed to believe the complaint. He said lthat a very small abount of overflow from the cooling towers is periodically put into the sewer but the sanitation dept. Keeps tabs on that.

CONTACT REPORT

AGENCY/AFFILIATION: EPA		
DEPARTMENT: RCRA		
ADDRESS/CITY: San Francisco		
COUNTY/STATE/ZIP:		
CONTACT(S)	**TITLE**	**PHONE**
1. Ron Leach		(415) 974-7965
2.		
E & E PERSON MAKING CONTACT:		**DATE:**
SUBJECT: RCRA Status		
SITE NAME: Omega Chemical Corp.		**EPA ID#:** CAD042245001

Ron was surprised to find out he was project officer. He checked an EPA List of sites whose permits are due to be issued this fiscal year and Omega was not on it.

CONTACT REPORT

AGENCY/AFFILIATION: EPA RCRA/Superfund Hotline		
DEPARTMENT:		
ADDRESS/CITY:		
COUNTY/STATE/ZIP:		
CONTACT(S)	**TITLE**	**PHONE**
1. Ross Elliott		(800) 424-9346
2.		
E & E PERSON MAKING CONTACT: Karen Johnson		**DATE:** 4/17/89
SUBJECT: RCRA recycling exemption		
SITE NAME: Omega Chemical Corp.		**EPA ID#:** CAD042245001

Spent solvents ARE solid wastes before recycling process. During recycling process it gets tricky. The solvent is no longer a waste once it is in a usable form.

As an aside, if the same spent solvent was sent to a different facility to be reused as a degreaser without treatment in between, it is NOT a waste. The Key factor here is the intended use of the waste. Direct reuse is exempt before but not after (unless can continue to be reused). Recycling is exempt after (that which becomes usable product) but not before (waste from other process). Still bottoms from recycling is not exempt.

CONTACT REPORT

AGENCY/AFFILIATION: RWQCB - Los Angeles		
DEPARTMENT: Ground water		
ADDRESS/CITY:		
COUNTY/STATE/ZIP:		
CONTACT(S)	**TITLE**	**PHONE**
1. Jim Ross	GW	(213) 620-2210
2. Roy Sakaida	UST	(213) 620-6090
E & E PERSON MAKING CONTACT: Karen Johnson		**DATE:** 4/11/89
SUBJECT: Agency files		
SITE NAME: Omega Chemical Corp. and Norac Co.		**EPA ID#:** CAD042245001 CAD008352957

Asked Jim Ross if they were doing any work or had a file on this site. He had never heard of it. He asked Roy Sakaida (I think from UST Section) if he was looking into the site and Roy said no.

Jim said to check with LA Co. DWP - Haz Mat Section. If the contamination wasn't bad enough, wouldn't have sent it on to Reg. Board.

DATE 4/5/89

TIME 11:00 A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
(W) WNW NW NNW

WEATHER

SITE Omega

TDD#

PHOTOGRAPHED BY:
Karen Johnson

SAMPLE ID# (if applicable)

DESCRIPTION: Containment wall of tank storage area metal bldg does not belong to Omega

DATE 4/5/89

TIME 11:00 A.M. P.M.

DIRECTION: N NNE NE (ENE)
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER

SITE Omega

TDD#

PHOTOGRAPHED BY:
Karen Johnson

SAMPLE ID# (if applicable)

DESCRIPTION: Looking thru fence along Putnam st. to back fence of Omega.

F1

FIELD PHOTOGRAPHY LOG SHEET

DATE 4/5/89

TIME 11:00 A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW (NW) NNW

WEATHER

SITE Omega

TDD#

PHOTOGRAPHED BY:
Karen Johnson

SAMPLE ID# (if applicable)

DESCRIPTION: Large door into "old" bldg-drums being (un)(loaded) from/to truck on other side

note: this area seems to be all storage-plan differs.

DATE 4/5/89

TIME 11:00 A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW (NW) NNW

WEATHER

SITE Omega

TDD#

PHOTOGRAPHED BY:
Karen Johnson

SAMPLE ID# (if applicable)

DESCRIPTION: Looking between tanks in S corner solvent smell stronger.

FILM

DATE 4/5/89

TIME 11:00 A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW (WSW)
W WNW NW NNW

WEATHER

SITE Omega

TDD#

PHOTOGRAPHED BY:
Karen Johnson

SAMPLE ID# (if applicable)

DESCRIPTION: View of driveway & truck unloading (or Loading).

DATE 4/5/89

TIME 11:00 A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
(W) WNW NW NNW

WEATHER

SITE Omega

TDD#

PHOTOGRAPHED BY:
Karen Johnson

SAMPLE ID# (if applicable)

DESCRIPTION: From side of skateland-drum storage area.

FILE

FIELD PHOTOGRAPHY LOG SHEET

DATE 4/5/89

TIME 11:00 A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
(S) SSW SW WSW
W WNW NW NNW

WEATHER

SITE Omega

TDD#

PHOTOGRAPHED BY:
Karen Johnson

SAMPLE ID# (if applicable)

DESCRIPTION: N. Corner of Omega BLDG and Drive-way entrance.

DATE 4/5/89

TIME 11:00 A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S (SSW) SW WSW
W WNW NW NNW

WEATHER

SITE Omega

TDD#

PHOTOGRAPHED BY:
Karen Johnson

SAMPLE ID# (if applicable)

DESCRIPTION: From Cal-Air parking lot-drum storage area. tank farm on right.

FILM

Appendix F

EPA Technical Assistance Team Site Assessment Report, August 1993

ecology and environment, inc.
11 GOLDEN SHORE, LONG BEACH, CALIFORNIA 90802, TEL. (310) 435-6188
International Specialists in the Environment

7 August 1993

U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Ref. No.: T190993-001
TDD No.: T099308-009
PAN No.: ECA1940-SAA

Attention: William E. Lewis, Deputy Project Officer

Subject: **Omega Recovery Services, Site Assessment, Whittier, CA**

On August 25, 1993, Environmental Protection Agency (EPA) On-Scene Coordinator (OSC) R. Martyn tasked the Technical Assistance Team (TAT) to conduct a walkthrough assessment of the bankrupt Omega Recovery Services Corp. (Omega) facility in Whittier, California. The request for EPA/TAT involvement was made by California EPA, Department of Toxic Substances Control (DTSC). DTSC requested the assessment in order to evaluate the current condition of over 2900 drums of unprocessed hazardous waste remaining on-site.

According to a DTSC situational letter (Attachment A), the Omega facility, located at 12504 E. Whittier Blvd., operated as an off-site hazardous waste treatment and storage facility under Interim Status designation from 1976 until 1991. The facility was involved with solvent recovery using on-site fractionating/distillation processes, hazardous waste fuels blending under the RCRA Boiler and Industrial Furnaces program and operated as a storage and transfer facility for other hazardous waste classifications. Reportedly, the reclamation of spent oxygenated and chlorinated solvents, chlorofluorocarbon refrigerants (CFCs) and paint waste solvent recovery constituted the majority of Omegas' business.

Due to chronic non-compliance with Interim Status standards, the Superior Court for the County of Los Angeles, ordered Omega in April 1991 to cease operation, remove all hazardous wastes and close the facility. Omega subsequently filed Chapter 11 bankruptcy in September 1991.

OSC Martyn arranged for TAT to meet DTSC representative P. Baranick and Omega President D. O'Meara on-site on August 27, 1993. TAT arrived on-site at 1300 hours that day and was provided a brief site tour by Mr. Baranick. The facility, less than one acre in size, is divided into two distinct areas. The facilities northern area was the former Interim Status storage and treatment area. The unit process equipment located here is still being used by Omega to process non-hazardous CFC refrigerants. The facilities southern

section was designated for product storage and other miscellaneous uses. Regardless of prior designations, the approximate 2900 plus drums of hazardous waste still on-site takes up virtually all available outside storage space across the site.

The drums are situated on pallets, sometimes three high, in rows across the site. Many of the drums are weathered from years of outside storage, however, only a relative few displayed signs of gross deterioration or leaking. Mr. Baranick pointed out the drums requiring stabilization or repacking to Mr. O'Meara who promised immediate action. Mr. Baranick also informed Mr. O'Meara that he wanted a daily inspection of the drums and immediate corrective action when necessary.

After the walkthrough, TAT discussed various aspects of the site with Mr. Baranick. Specific information as to how the drums, received under hazardous waste manifest, were never processed as contracted by the individual generators was not known to Mr. Baranick. Also unclear is how Omega is allowed to continue to operate the CFC recovery operation despite the April 1991 Court Order. Mr. Baranick did state that the Omega site is an open case with the County District Attorneys Office.

DTSCs' current focus is the implementation of drum removal and site restoration activities. Omega never had a valid site closure trust account and has so far been unable to secure a cleanup loan from the bank that holds the security interest in the property. Also, investors interested in building a shopping center in the area are apparently unwilling to assume the liability associated with purchase of the Omega property.

A potential option available to DTSC is the organization of a generator recall for removal of the drums. The DTSC Facilities Management Branch has already begun to notify generators in an attempt to organize a committee to fund and conduct a removal action. DTSC will continue to pursue this option unless and until a PRP funding mechanism becomes available.

A standard practice that Omega used to identify drums could make a generator recall a difficult exercise. Omega routinely removed the generator hazardous waste Mark from incoming manifested shipments and applied their own Omega Mark. Therefore, there is no record of the generator, associated manifest document number and accumulation start date available on each drum. This makes any kind of generator reconciliation through physical drum inventory impossible. DTSC is relying on manifest records retained by Omega and information available from Sacramento in preparing generator lists and volumes.

TAT contacted OSC Martyn and summarized the information learned during the site visit. Although Omega represents a significant waste management problem to DTSC, site conditions do not currently warrant federal attention. Mr. Baranick will continue to work with Mr. O'Meara to ensure that drum storage inspection and housekeeping efforts continue to avert emergency conditions on-site. Removal funding options outside of federal Superfund are being pursued by DTSC. In the event emergency stabilization funding or actual government sponsored cleanup funding does become necessary, DTSC will contact the appropriate State office or EPA.

If you have any further questions regarding this site assessment, please do not hesitate to contact this office.

Sincerely,

Craig Benson
Assistant Technical Assistance Team Leader

attachment

cc: R. Martyn
file

FUNDING JUSTIFICATION FOR SITE REMOVAL ACTION ACTIVITIES

Site: Omega Chemical Corporation

Site Number: 300223

Funding Requested: (estimates from closure plan)

Total waste 176,675 gallons	
106.005 gallons is recyclable	$38,162
38,869 gallons is usable as fuel	$21,378
3,534 gallons aqueous waste	$5,478
28,268 gallons incinerated	$308,400
Transportation	$30,776
Drum disposal	$1,450
Contingency safety factor of 15%	$60,632
TOTAL	$464,842

Purpose:

The removal action will consist of haz-cating and segregation of drums by waste types. Waste type groups will be sampled and profiled for disposal. These actions are necessary in order to prevent further soil and possible ground water contamination from wastes which have been stored in deteriorating drums for the past four years.

Background:

Omega Chemical Corporation (Omega), located at 12504 East Whittier Blvd., Whittier, California 90602, operated as an off-site hazardous waste treatment and storage facility under ISD from 1976 until 1991. Omega operated a drum storage area and several treatment units at this site. Hazardous waste solvents were processed, and brought up to specification, and sold as new product. Omega is still processing non-hazardous chloroflorocarbon refrigerants.

The Department of Toxic Substances Control (Department) conducted several inspections from 1984 to 1991 and found Omega was consistently out of compliance with state and federal hazardous waste laws and regulations. In April 1991, the Superior Court for the County of Los Angeles, ordered Omega to cease operation, remove all hazardous wastes and close the facility. To date, Omega has not fully complied with the court order.

Omega has filed a Chapter 11 bankruptcy in September 1991. There are approximately 2900 drums at the site which contain paint sludges and solvent residues.

General Description of Facility:

Omega at one time had 30 employees and operated 24 hours per day, 7 days per week. The facility is equipped with distillation units, fractionating columns, wiped and thin film evaporators, extraction columns, a reactor, and five 5000 gallon waste storage tanks.

The northern area was for drum storage of incoming waste. In the northwest section are the five tanks. In the west end of the warehouse are located the production equipment, while the rest of the building is used for storage of product. The south yard is used for storage of Omega generated hazardous wastes.

Operations:

Omega was a recycler of oxygenated and chlorinated solvents, chlorofluorocarbon refrigerants (CFCs), and lithium bromide.

The waste solvents are processed and brought up to original specifications and are resold as new product. Omega also took in large quantities of paint waste from which the solvents were recovered.

Waste solvents from incoming drums were transferred to the five tanks by means of a diaphragm pump. An inline filter separated the solids from the solvent. Waste solvents were then pumped from the tanks to the process equipment. Solvents contaminated with oil and dissolved solids first went through an evaporator. The solvent vapor rises and is recovered in the condenser. This condensed solvent is further refined in the distillation unit. The residual solids and oil were placed in drums and set in the storage yard.

Status:

Facilities Management Branch (FMB) has met with Site Mitigation Branch (SMB) to discuss the issues. With in the next two weeks the bankruptcy court may dissolve Omega. FMB has arranged for a meeting with two hundred generators of the waste in order to form a committee to fund and conduct a removal action. Should these efforts fail, State funds may be required. The Omega site may soon be referred to SMB to oversee the removal action.

Appendix G

EPA Technical Assistance Team Site Assessment Report, March 1995

ecology and environment, inc.
11 GOLDEN SHORE, LONG BEACH, CALIFORNIA 90802, TEL. (310) 435-6188
International Specialists in the Environment

March 6, 1995

U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Ref. No.: T190295-004
TDD No.: T099501-007
PAN No.: ECA1940-SBA

Attention: William E. Lewis, Deputy Project Officer

Subject: **Omega Recovery Services Site Assessment, Whittier, California**

On January 18, 1995, Environmental Protection Agency (EPA) On-Scene Coordinator (OSC) R. Martyn tasked the Technical Assistance Team (TAT) to conduct a site assessment in conjunction with California Department of Toxic Substances Control (DTSC) personnel at Omega Recovery Services (Omega), 12504 E. Whittier Boulevard in Whittier, Los Angeles County, California (see Figure 1, Site Location Map and Figure 2, Facility Map). DTSC had requested EPA involvement to evaluate the threat posed to the locality by Omega's storage of hazardous wastes in drums in poor condition. Omega has had a history of chronic non-compliance with RCRA Interim Status standards, and has failed to comply with an Order(s) issued by the Superior Court of Los Angeles County which required that the hazardous wastes be removed from the facility.

Omega operated as an off-site hazardous waste treatment and storage facility under Interim Status designation from 1976 to 1991. The facility was involved with solvent recovery using on-site fractionating/distillation processes, hazardous waste fuels blending under the RCRA Boiler and Industrial Furnaces program, and operated as a storage and transfer facility for other hazardous waste classifications. Reportedly, the reclamation of spent oxygenated and chlorinated solvents, chlorofluorocarbon refrigerants (CFSs) and paint waste solvent recovery constituted the majority of Omega's business.

TAT had previously conducted a site assessment at Omega on August 27, 1993 (Reference TDD No. T099308-009). During the assessment, approximately 2,900 deteriorating drums stacked three high on pallets were observed at the site. As a result of the site assessment, TAT determined that the site did not warrant federal attention at that time, and recommended continued DTSC oversight and inspections.

On January 20, 1995, TAT met with S. Amir and S. Haddad at DTSC's offices in Glendale, California. At the meeting, TAT was apprised of the current owner non-compliance status and conditions at the site. DTSC's enforcement section had been conducting weekly inspections at Omega and directing Omega to overpack leaking drums as they were discovered, but DTSC's goal of a complete mitigation of the problem seemed to be being ignored by the facility owner, Mr. D. O'Meara.

DTSC stated that over 3,000 generators had been identified as contributors to the waste stored at Omega, and that of these, 165 major generators had each delivered more than 10,000 tons of waste material to Omega. DTSC had sent letters to the 165 major generators and 52 of these formed a committee to address the problem.

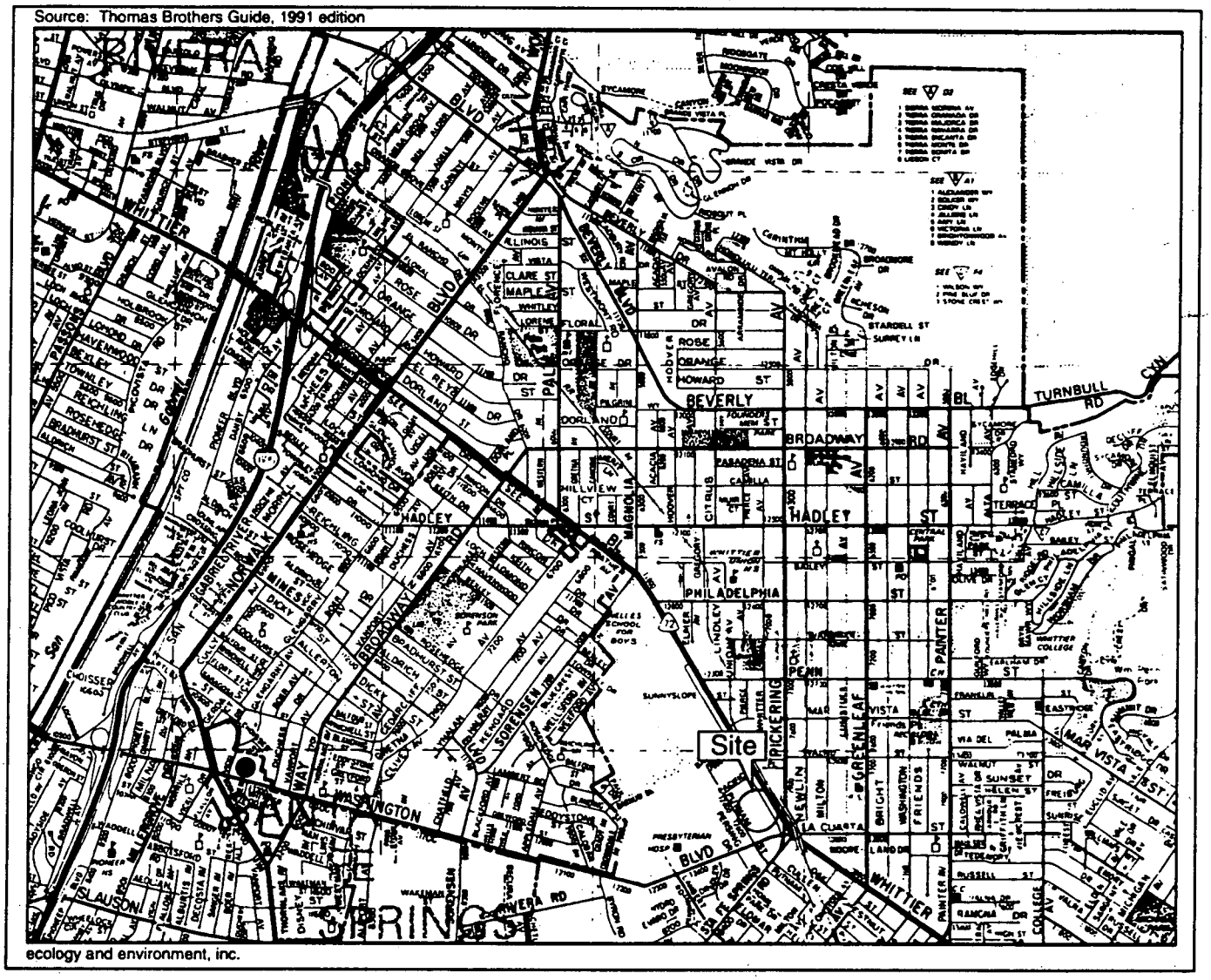


Figure 1
Site Location Map
Omega Recovery Services
12504 E. Whittier Boulevard, Whittier, California

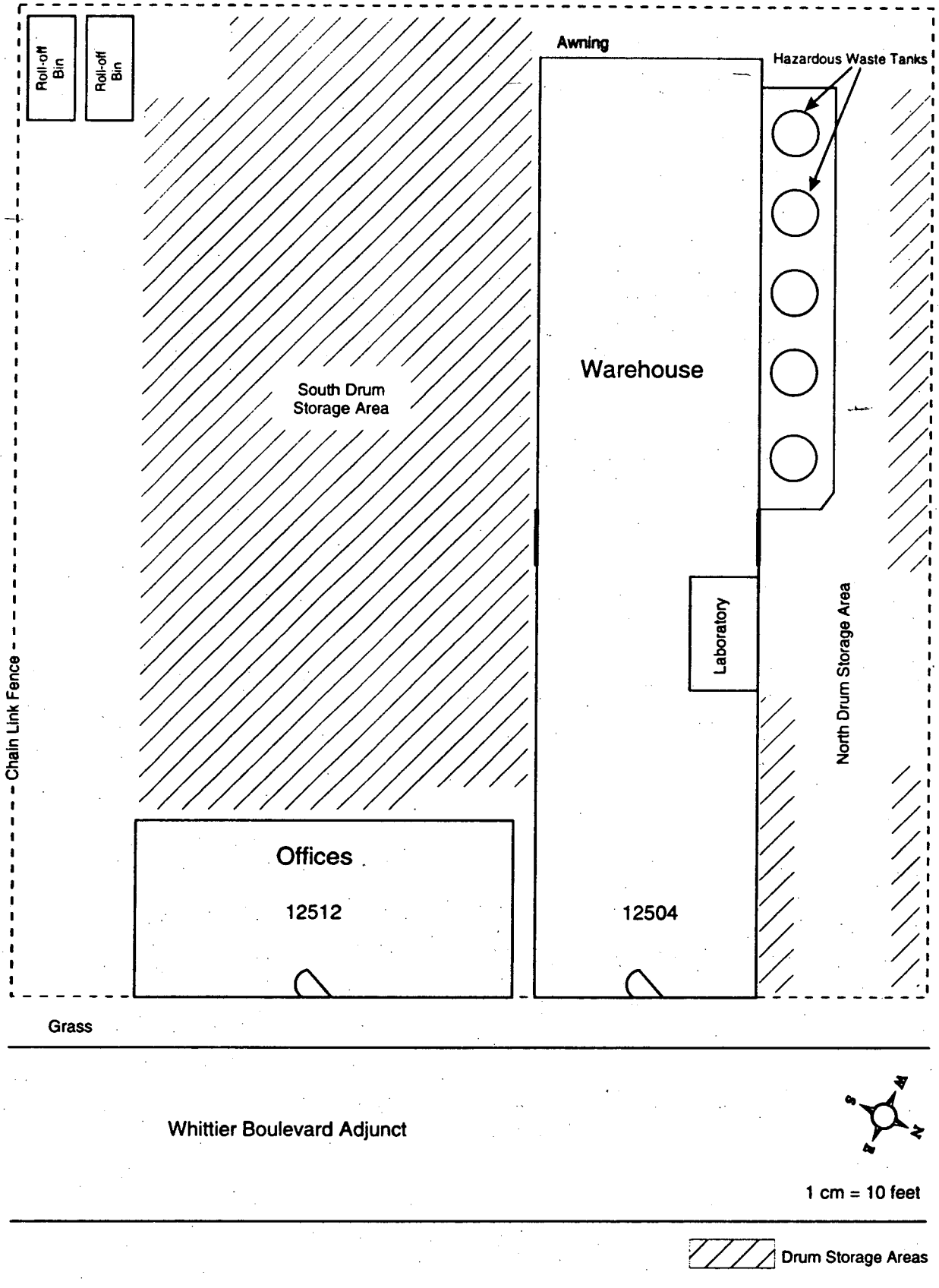


Figure 2
Facility Map
Omega Chemical Corporation
Whittier, California

Subsequent to the meeting, TAT and Mr. Haddad conducted an inspection of the site. TAT found a similar situation to that observed in 1993, with drums in good to poor condition stacked three high on most of the available space on the property. On this visit, however, three (possibly four) leaking drums were observed, and Mr. Haddad stated that he would have Omega overpack the drums. All drums had hazardous waste marks attached, but it appeared that original generator marks had been replaced with Omega marks. Only two waste codes, F002 and D001, were noted. No information was available regarding individual drum contents, and it was not possible to determine whether drums staged next to each other were of similar compatibility. TAT photographed and videotaped the site in order to document site conditions. Photodocumentation is provided in Attachment A of this report.

On February 1, 1995, a meeting was held at DTSC's offices in Glendale to address the situation at Omega. DTSC and EPA representatives, TAT, Mr. O'Meara, IT Corporation (contracted to Omega), and representatives from a steering committee of responsible generators were present at the meeting. A complete list of attendees is provided in Attachment B.

OSC Martyn addressed the group, stating that there was an imminent and substantial threat to human health and the environment posed by the hazardous materials present at Omega. He therefore requested the voluntary compliance of the owner, operators, and generators with EPA- and DTSC-specified criteria to clean up the site. Immediate compliance was requested for 24-hour security at the site, and for all leaking drums and/or damaged drums to be dealt with immediately.

Ms. Long (DTSC) discussed Omega's non-compliance with a recent Court Order (details of the Court Order were not available to TAT), and distributed a DTSC-drafted Consent Order addressing site clean-up requirements to Mr. O'Meara and the steering committee representatives to be signed and approved within 30 days. In the event that the Consent Order is not approved within that timeframe, DTSC would issue a Unilateral Order and request EPA to assume the cleanup of the site.

Mr. O'Meara stated that he would liaise with his contractor, IT Corporation, and with DTSC/EPA in order to expedite the development of a workplan for approval by the agencies that would lead to the subsequent removal and disposal of the drummed wastes.

DTSC presented Mr. O'Meara with a schedule:

- Effective immediately, 24-hour security will be maintained at Omega.
- Effective immediately, overpacking of damaged/leaking drums will be conducted.
- By February 10, 1995 DTSC will review and comment on Omega's workplan.
- By February 24, 1995 Omega and the Responsible Parties (RPs) will provide DTSC with a revised workplan.
- By March 3, 1995 DTSC expects to approve an adequate workplan.
- Also by March 3, 1995 all parties are to have executed the Consent Order.

OSC Martyn issued a Notice of Federal Interest to Mr. O'Meara and the steering committee representatives, and stated that EPA will pursue the cleanup if the above deadlines were not met.

On February 6, 1995, EPA OSC K. Lawrence inspected the Omega site to determine Omega's initial compliance with the conditions set forth in the February 1 meeting. The visit occurred on February 6, 1995, with TAT present to take notes, photographs, and videotape. Mr. G. Forman of DTSC also attended, with Mr. M. Lucas representing Omega. At the conclusion of the site inspection, Mr. J. Tapia, representative of IT Corporation, arrived to inspect the site and mark drums for overpacking. As a result of the inspection, approximately 55 drums were identified for overpack due to leakage, corrosion, or other drum damage, and numerous pallets in poor condition were marked for replacement.

On February 7, 1995, EPA directed TAT to review a site stabilization workplan regarding Omega, and begin on-site monitoring of overpacking/stabilization activities at Omega under TDD No. T099502-006. Activities occurring under this TDD will be documented in a later report.

If you have any questions regarding this report, please do not hesitate to contact this office.

Respectfully submitted,

M. Schwennesen
Technical Assistance Team Member

attachments

cc: R. Martyn, FOSC
File

ATTACHMENT A

PHOTODOCUMENTATION

Omega Recovery Services

TDD: T099501-007 PAN: ECA1940SBA

South (main) drum storage area, view to south

January 19, 1995 Photographed by: R. Randall

South (main) drum storage area, view to northwest

January 19, 1995 Photographed by: R. Randall

Omega Recovery Services

TDD: T099501-007 PAN: ECA1940SBA

Leaking drum

January 19, 1995 Photographed by: R. Randall

Leaking, corroded drum

January 19, 1995 Photographed by: R. Randall

ATTACHMENT B

ATTENDEES OF FEBRUARY 1, 1995 MEETING

OMEGA CHEMICAL CORPORATION

PRP Group Meeting
February 1, 1995

Attendance List

NAME	COMPANY	PHONE NUMBER
Sayareh Amir	DTSC	(818) 551-2822
Shawn Haddad	DTSC	2962
DAVID LENNON	IT Corporation	310-830-1781
DENNIS O'MENLIA	OMEGA	(310) 698-0991
JOHN JARDS	USEPA	415-744-2298
KAY LAWRENCE	U.S. EPA	415 744 2289
RANDY RANDALL	ETE (EPA CONTRACTOR)	310 435 6188
Richard Martyn	USEPA	(415) 744-2288
EARL [illegible]	[illegible]	[illegible]
JUDITH [illegible]	Skilling & Austin for Steering Committee	213-346-6637
Robin Hulshizer	Latham + Watkins S.C.	213-891-7908
Keith F. Millhaise	Paul, Hastings	(213) 683-6244
DAN COFFEY	Attorney at Law	310 791 0197
Sarah Morrison	DTSC, Region 3	(818) 551-2821
RAJEEV SANE	UNOCAL (S.C.)	(213) 977-7332
Nancy Long	DTSC - OLC	(916) 324-3154
Hamid Saebfar	DTSC	(818) 551-2876
PAUL BARANICH	DTSC - REG. 3	(818) 551-2914

Appendix H

EPA Technical Assistance Team Report of On-Site Monitoring Activities, July 1995

ecology and environment, inc.
International Specialists in the Environment

11 Golden Shore Drive
Long Beach, California 90802
Tel: (310) 435-6188, Fax: (310) 435-6687

July 27, 1995

U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Ref. No.: T190795-002
TDD No.: T099502-006
PAN No.: ECA1940-MAA

Attention: William E. Lewis, Deputy Project Officer

Subject: **On-Site Monitoring of Site Stabilization Activities, Omega Chemical Corporation, Whittier, California**

Omega Chemical Corporation (Omega) is a defunct hazardous waste treatment and storage facility which was under Interim Status designation from 1976 to 1991. The facility, located at 12504 East Whittier Boulevard in Whittier, Los Angeles County, California (see Figures 1 and 2), conducted solvent recovery using on-site fractionation/distillation processes; hazardous waste fuels blending under the RCRA Boiler and Industrial Furnaces program; and operated as a storage and transfer facility for other hazardous waste classifications. Reportedly, the reclamation of spent oxygenated and chlorinated solvents, chlorofluorocarbon refrigerants (CFCs) and paint waste solvent recovery constituted the majority of Omega's business. Omega has had a history of chronic non-compliance with RCRA Interim Status standards, and has failed to comply with an Order(s) issued by the Superior Court of Los Angeles County which required that the hazardous wastes be removed from the facility.

The Technical Assistance Team (TAT) was first involved with the facility in August 1993, when a site assessment was conducted at the request of the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). At that time, TAT determined that the site did not warrant federal attention, and recommended that DTSC continue oversight of the facility (TDD No. T099308-009). At the request of DTSC, TAT conducted a second site assessment at Omega in January 1995, under TDD No. T099501-007. The assessment involved a site inspection, during which TAT observed approximately 2,700 55-gallon drums, which were typically in poor condition, placed on pallets in tiers up to three high. Each drum had a hazardous waste label attached, and only one of two EPA waste codes were identified on the drums: D001 or F002. Some of the drums were observed to be leaking, and the site appeared to present a danger to the surrounding community.

A roller skating rink is located immediately adjacent to the Omega property to the east. Children and teenagers are often seen exiting buses in front of the rink, and they often mill around outside, near the Omega fence. The rink is open late at night, when no Omega personnel are available to deter trespassers onto the Omega property. In addition, two hospitals are located within one-half mile of the site, and a residential community is located immediately across Whittier Boulevard from the Omega site.

Because of these and other considerations for community safety, EPA On-Scene Coordinator (OSC) R. Martyn issued a Notice of Federal Interest to the facility owner, Mr. D. O'Meara, during a meeting conducted on February 1, 1995. The Notice was also issued to a steering committee representing a group of potential responsible parties (PRPs) which had been identified by DTSC. Mr. O'Meara and the steering committee were directed to:

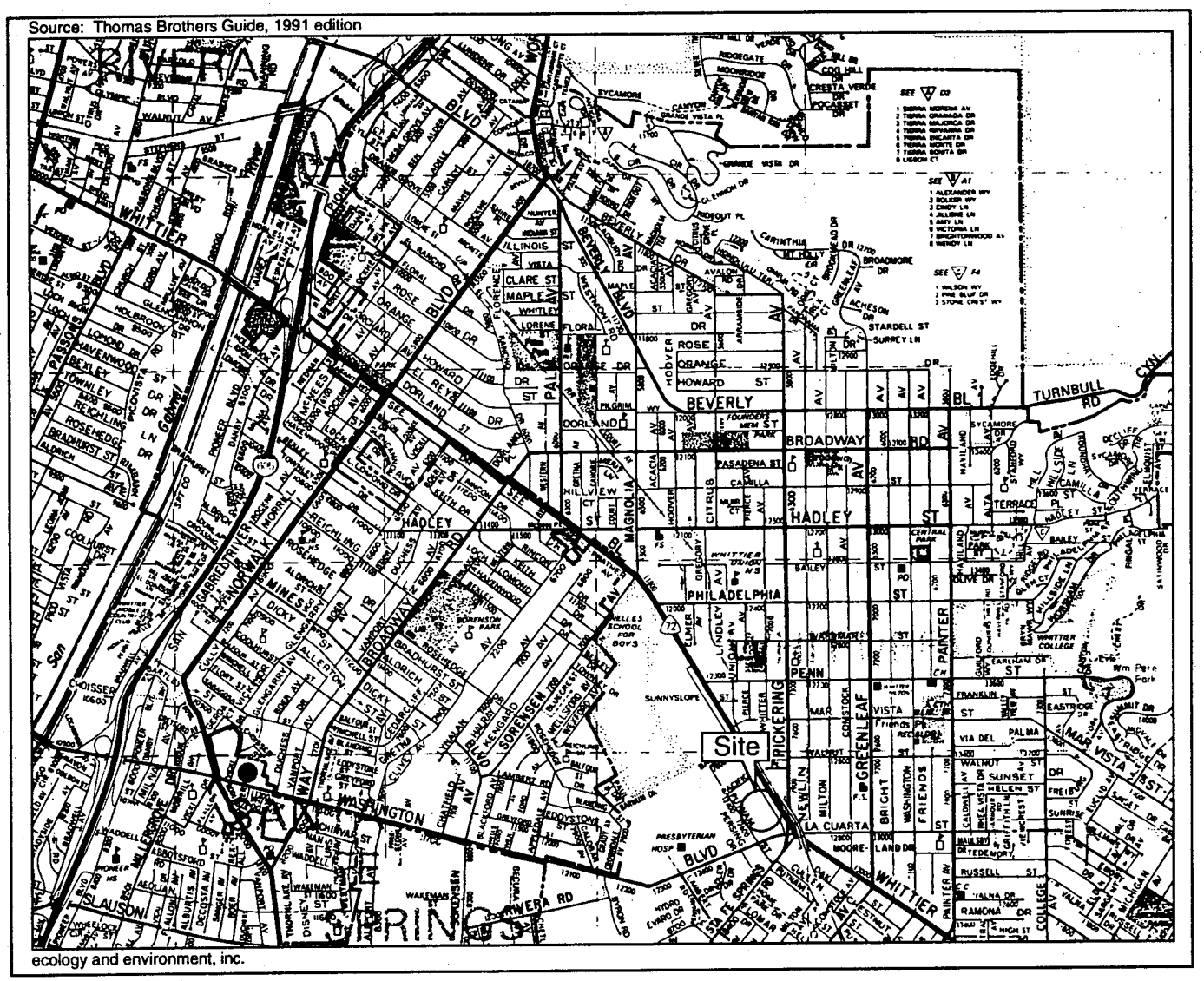


Figure 1
Site Location Map
Omega Chemical Corporation
12504 E. Whittier Boulevard, Whittier, California

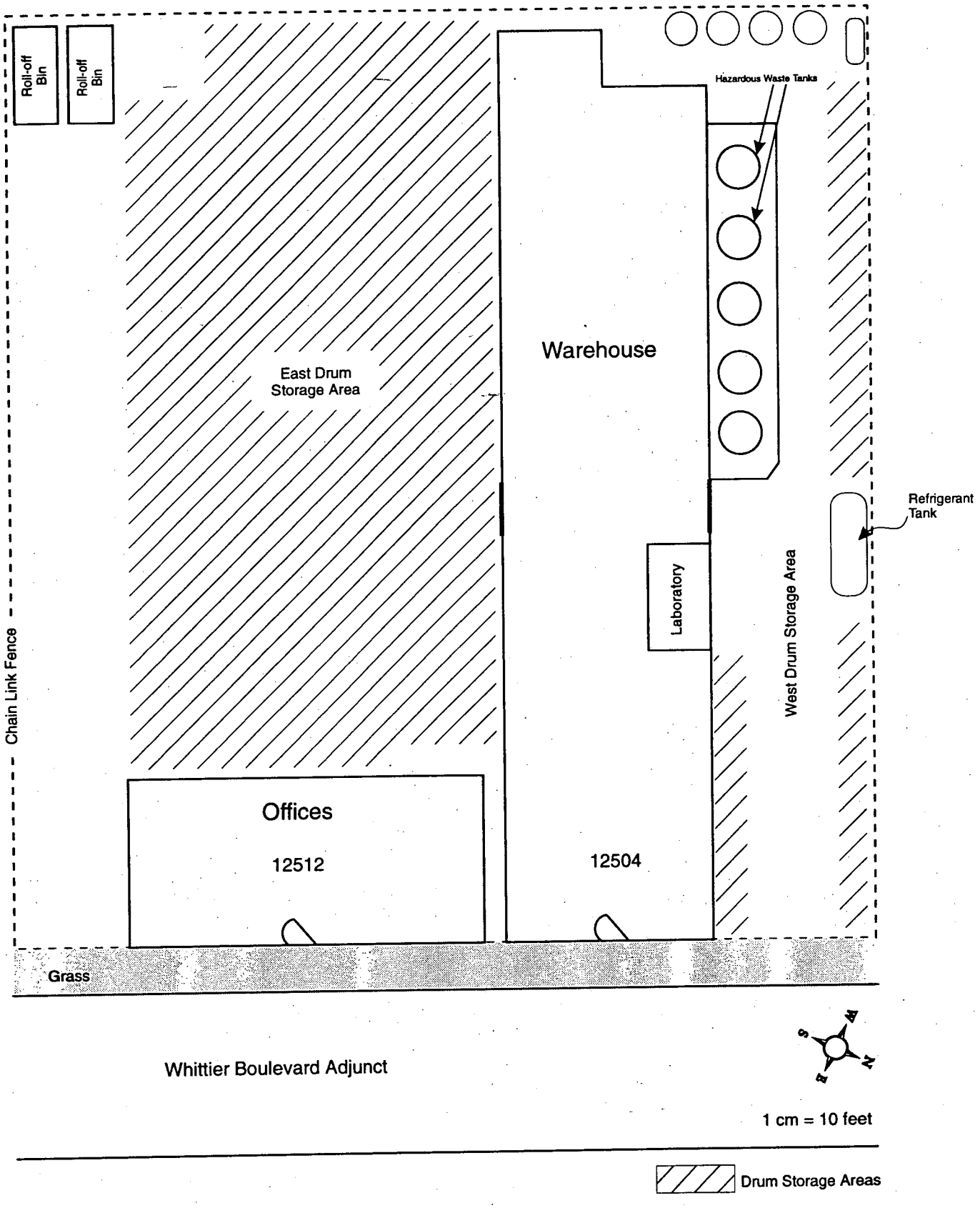


Figure 2
Facility Map
Omega Chemical Corporation
Whittier, California

- Immediately initiate 24-hour security at Omega;

- Prepare, and upon EPA approval, initiate a site stabilization work plan for the overpacking of all damaged/leaking drums; and

- Every work day, per the work plan, inspect the Omega property for leaking drums, and hazard categorize and properly overpack any leaking drums by the next day.

Mr. O'Meara contracted IT Corporation to prepare and implement the work plan. OSC Martyn tasked the TAT to assist in the review of the work plan and associated health and safety plan, which EPA approved for implementation on February 8, 1995.

Prior to final approval of the work plan, on February 6, 1995, EPA OSC K. Lawrence inspected the Omega site to determine Omega's initial compliance with the conditions set forth in the February 1 meeting. TAT was present to take notes, photographs, and videotape. Mr. G. Forman of DTSC also attended, with Mr. M. Lucas representing Omega. At the conclusion of the site inspection, Mr. J. Tapia, representative of IT Corporation, arrived to inspect the site and mark drums for overpack. As a result of the inspection, Mr. Tapia identified approximately 55 drums for overpack due to leakage, corrosion, or other drum damage, and numerous pallets in poor condition were marked for replacement.

During the period February 9 through 23, 1995, weather permitting and excluding weekends, IT Corporation personnel conducted damaged/leaking drum overpacking operations and pallet change-outs. IT Corporation personnel on site included a site supervisor and a chemist at all times, in addition to technicians. Mr. O'Meara provided IT Corporation personnel with drum overpacks and new pallets, as required. TAT was present to oversee the overpacking operations on all but one day during this time period.

Each drum identified for overpacking was sampled in Level B protective equipment, as per the IT Corporation work plan and health and safety plan. On-site monitoring equipment was used to continuously monitor for potential air hazards during all operations. These instruments included a percent lower explosive limit, hydrogen sulfide, carbon monoxide, and oxygen level meter; a hydrogen cyanide monitor; a photoionization detector; and a flame ionization detector. Additionally, numerous Draeger® tubes were available to identify specific compounds. Hazard categorization was conducted in Level C personal protection until Omega's on-site laboratory fume hood was utilized.

Prior to being overpacked, identifying information available on a drum was logged, and then the drum was sampled for hazard categorization. In situations where drums were actually leaking (in every instance from a metal drum), the drum was placed in a polyurethane overpack drum prior to sampling and subsequent hazard categorization, in order to minimize drum contents release. The hazard categorization involved the testing for 12 chemical and physical parameters, in order to determine the characteristics of the waste and to determine the appropriate type of drum overpack to be employed.

Forklifts and drum slings or grabbers were used to transport drums to a drum sampling area and to lift the drums into overpack containers. This method was typically acceptable; however, several drums were in too poor a condition to lift, and the contents had to be manually pumped out to an extent sufficient to avoid spillage of drum contents. In such a situation, the pumped out contents were decanted back into the now-overpacked drum prior to sealing the overpack.

During the course of the daily drum overpacking operations, numerous additional leaking drums were identified

and were sampled and overpacked. By February 23, 1995, 83 drums had been overpacked. Attachment A provides a table of overpacked drum numbers and hazard categorization information.

One of the numbers available on the Omega hazardous waste labels was an Omega code, used ostensibly as a means for identifying the type of contents in the drum. The code is defined in Attachment A, and can be compared to the contents found in the drums overpacked. In numerous cases, neither the EPA nor the Omega codes matched the actual contents in the drum.

Each overpacked drum was appropriately labeled per U.S. Department of Transportation requirements by IT Corporation personnel. All overpacked drums were left on the Omega property.

During all overpacking operations, TAT maintained logbooks of activities conducted; inspected the facility for additional leaking drums; took videotape and photographs of operations and significant observances; and kept OSC Martyn informed of activities conducted. Attachment B presents photodocumentation of representative activities conducted under this TDD.

Daily inspections continued for the period February 23 through June 26, 1995. Each inspection was conducted by TAT and a representative of IT Corporation. Only three additional leaking drums were discovered , all on June 12, 1995. At the direction of OSC Martyn, these drums were overpacked the same day, as they represented a release to the community.

On May 9, 1995, EPA issued CERCLA Administrative Order No. 95-15 to Mr. O'Meara and the PRPs (Respondents), specifying requirements for a complete and responsive mitigation of conditions at the site. By late June, 1995, the Respondents had adequately presented plans to comply with the initial phase of mitigative activities specified in the Order, and TAT began oversight of Respondent activities under TDD No. T099506-005. Activities occurring under this TDD will be documented in a later report.

If you have any questions regarding this report, please do not hesitate to contact this office.

Respectfully submitted,

M. Schwennesen
Technical Assistance Team Member

attachments

cc: R. Martyn, FOSC
File

ATTACHMENT A

TABLE OF OVERPACKED DRUMS

Omega Drum Overpacking Data

IT Drum Number	Ω Drum Number	OVA Reading (ppm)	Ω Hazardous Waste Label Codes			Field-Observed/IT Hazcat-Observed Description of Drum Contents	Hazard Categorization Results											
			EPA	CA	Ω*		Flash Point	Air Reactive	Water Reactive	pH	Oxidizer	Cyanide	Sulfide	Hexane Solubility	Density (in Water)	Water Solubility	Halogens	Peroxides
1			D001	461	1B	Orange liquid, black solid	N	N	N	7	N	N	N	N	=	Y	Y	N
2			F002	351	1C	Vermiculite (wet)	Y	N	N	7	N	N	N	N	<	N	N	N
3			D001	461	1C1	Black tar	N	N	N	7	N	N	N	Y	<	N	N	N
4			F002	351	1C	Sand	N	N	N	12	N	N	N	N	<	N	N	N
5			F002	351	1C	Floating white solid on a clear liquid	N	N	N	7	N	N	N	N	=	Y	N	N
6			F002	351	1C	Tissues soaked with brown liquid	Y	N	N	7	N	N	N	N	<	N	N	N
7			F002	351	1C	White powder	N	N	N	7	N	N	N	slight	>	N	Y	N
8			D001	461	1B	Top: brown ?; bottom: thick yellow liquid	Y	N	N	13	N	N	N	N	>	N	Y	0.5 ppm
9			D001	461	1C	Pink/white crystals	N	N	N	7	N	N	N	N	>	Y	N	N
10			D001	461	1C1	Top: oily; bottom: brown liquid	Y	N	N	7	N	N	N	N	<	N	Y	N
11			F002	351	1B	Thick black liquid	Y	N	color change	7	N	N	N	Y	=	N	Y	N
12			D001	461	1C1	Brown/white liquids and solids	N	N	N	7	N	N	N	N	=	Y	N	N
13			F002	351	1C1	Thick brown/black liquid	Y	N	N	7	N	N	N	N	<	N	N	N
14			F002	351	1C5	Clear liquid with suspended particles	N	N	N	7	N	N	N	N	particles sink	N	Y	N
15			F002	351	1C	Thick black liquid	Y	N	N	10	N	N	N	Y	>	N	N	N
16			D001	461	1B	Clear liquid on top, gray/white thick bottom	Y	N	N	7	N	N	N	N	bottom layer sinks	bottom layer: N	Y	0-5 ppm
17			D001	461	1B	Gray/black mud, brown liquid	Y	N	N	7	N	N	N	N	>	N	Y	N
18			D001	461	1B	Orange liquid, gray solids, paint sludge	Y	N	N	7	N	N	N	N	=	Y (N for solids)	N	N
19			D001	461	1B	Brown, oily solid	Y	N	N	7	N	N	N	N	>	N	N	N
20			F002	351	1C	White/brown solids	N	N	N	7	N	reacted with NaOH	N	N	>	Y	N	N
21			D001	461	1C1	Yellow, jelly-like solid	Y	N	N	7	N	N	N	N	>	N	Y	N
22			F002	351	1C	Plastic, brown liquid	Y	N	N	7	N	N	N	N	<	N	N	N
23			F002	351	1C	Brown particles: sand, gravel, vermiculite?	N	N	N	7	N	N	N	N	< >	N	N	N
24			D001	461	1C1	Top phase brown, bottom clear	Y	N	N	7	N	N	N	N	top = bottom >	top Y bottom N	N	N
25			D001	461	1C1	White/orange crystals/rocks	Y	N	N	7	N	N	N	N	<	N	N	0.5 ppm

Omega Drum Overpacking Data

IT Drum Number	Ω Drum Number	OVA Reading (ppm)	Ω Hazardous Waste Label Codes			Field-Observed/IT Hazcat-Observed Description of Drum Contents	Hazard Categorization Results											
			EPA	CA	Ω*		Flash Point	Air Reactive	Water Reactive	pH	Oxidizer	Cyanide	Sulfide	Hexane Solubility	Density (in Water)	Water Solubility	Halogens	Peroxides
26	1833		F002	351	1C	Three phases - top: brown liquid (oil); middle: brown liquid with particles (sand); bottom: white/yellow paste	Y	N	N	7	N	N	N	N	liquid < particles >	N	Y	N
27	268		F002	351	1C3	Top: brown liquid; bottom: black/brown sand	Y	N	N	7	N	N	N	N	liquid < particles >	N	Y	N
28	276		F002	351	1C	Top: light brown liquid; bottom: thick brown liquid	Y	N	N	7	N	N	N	N	>	N	Y	N
29	636		F?	?	1C	Hues of purple/violet, white/gray small rocks	Y	N	N	7	N	N	N	N	>	N	Y	N
30	346		F002	351	1C5	Light greenish/yellow (resin), hard matrix, crystal solid	Y	N	N	7	N	N	N	N	>	N	N	N
31	324		F002	351	1C2	Yellow hard (resin) matrix, crystal solid	Y	N	N	7	N	N	N	N	>	N	N	N
32	284		F002	351	1C	Sand	N	N	N	7	N	N	N	N	>	N	N	N
33	R-1814		D001	461	1C1	Dark orange thick liquid (paint sludge)	N	N	N	7	N	N	N	N	<	N	N	N
34	1825		D001	461	1C1	Clear liquid	N	N	N	3	N	N	N	N	=	Y	N	N
35	10517		D001	461	1C1	Brown liquid, some dark brown paste (glue)	N	N	N	7	N	N	N	N	liquid = solid floats	liquid Y paste N	Y	0.5 ppm
36	1757		D001	461	1C1	Debris (plastic, dirt) in clear liquid	N	N	N	4	N	N	N	N	=	liquid Y particles N	N	N
37	1793		D001	461	1C1	Oily water	Y	N	N	7	N	N	N	N	=	Y	slight	N
38	1720		F002	351	1C5	Orange liquid with reddish orange sediment	N	N	N	3	N	N	N	N	>	Y	Y	N
39	2033	400	D001	461	1C1	Gray slurry with orange sludge at bottom	N	N	N	5	N	Y	N	Y	>	N	Y	N
40	455		F002	351	(none)	Pink and beige fine gravel	N	N	N	7	N	N	N	N	>	partial	N	N
41	2048	>1,000	D001	461	1B	Blue liquid with black solid pieces	N	N	N	6	N	N	N	N	>	partial	N	0.5 ppm
42	628	60	D001	461	1C5	Black oil solidified with vermiculite, oil sludge	N	N	N	6	N	N	N	partial	>	N	N	< 0.5 ppm
43	1496	>1,000	D001	461	1C1	Plastic and trash/rust colored crystals in black sludge, vermiculite	Y	N	N	5	N	N	N	N	<	partial	N	N
44	1760	>1,000	F002	351	1C	Liquid/sludge/gray suspended solids, sludge-like and pourable	N	N	N	5	N	N	N	partial	>	N	Y	N
45	1704	0	D001	461	1C1	Aqueous solution over gray mud/clear liquid with gray sediment	N	N	N	7	N	N	N	N	>	partial	N	N
46	1898		F002	351	1C	Black foaming solid	Y	N	N	7	N	N	N	N	>	N	Y	N
47	1966	200	D001	461	1C1	Milky/black mud/whitish paint sludge with oil	Y	N	N	6	N	N	N	N	oil <	N	Y	N
48	222		F002	351	1C5	White crystals/white, yellow, and brown powder	N	N	N	7	N	N	N	N	>	N	Y	N
49	1522		F002	351	1C	Trash, burned ceramic-like material/paint chips, paint solids, vermiculite, glass	N	N	N	6	N	N	N	N	>	Y	N	N
50	1773		F002	351	1C	Yellow resinous semi-liquid/thick brown liquid with white and pink sediments	Y	N	N	4	N	N	N	Y	<	N	N	0.5 ppm

Omega Drum Overpacking Data

IT Drum Number	Ω Drum Number	OVA Reading (ppm)	Ω Hazardous Waste Label Codes			Field-Observed/IT Hazcat-Observed Description of Drum Contents	Hazard Categorization Results											
			EPA	CA	Ω*		Flash Point	Air Reactive	Water Reactive	pH	Oxidizer	Cyanide	Sulfide	Hexane Solubility	Density (in Water)	Water Solubility	Halogens	Peroxides
51	2711		F002	351	1C5	Vermiculite, wood, metal/brown sand, brown mud-like solid	N	N	N	4	Y	N	N	N	>	Y (except sand)	N	N
52	223		F002	351	1C	Dirt, trash/sand with gray solids, some liquid (very little)	N	N	N	6	N	N	N	N	>	partial	N	N
53	83		F002	351	1C	Rusty-looking sand/resin beads with black and white sludge	Y	N	N	6	N	N	N	N	>	white Y black N	N	N
54	1423		D001	461	1C5	Oily mud/oil/water/sludge, black liquid	Y	N	N	5	N	?	N	partial	>	partial	Y	N
55	R-071	>1,000	D001	461	"PR"	Rusty-looking sludge/brown semi-viscous liquid	Y	N	N	2	N	N	N	N	?	Y	Y	N
56	2285		D001	461	1C1	Thick, black liquid/dark very viscous liquid, ink	Y	N	N	6	N	? reaction	N	N	>	N	N	N
57	2243		F002	351	"Filters"	Laboratory glassware, disposable (vials, pipets, etc.)/laboratory waste, burets, sealant, rags, etc.	N	N	N	2 6	N	N	N	Y	>	N	Y	N
58	2233		F002	351	1C	Dark brown liquid, trash/viscous black liquid, like oil	Y	N	N	7	N	N	N	Y	<	N	N	N
59	2456		F002	351	1C	Gray, gravelly solid/black pebbles, like charcoal	N	N	N	7	N	N	N	N	>	N	Y	N
60	2338		F002	351	1C	Oily-looking dirt/sand solidified with black solid	N	N	N	7	N	N	N	partial	>	N	N	N
61	2253		F002	351	1C	Black, oily tar/heavy black oil sludge with liquid	N	N	N	11	N	N	N	N	?	Y	N	< 0.5 ppm
62	2308		F002	351	1C	Antifreeze?, oil scum on top/light green liquid with gray floating sludge	Y	N	N	10	N	N	N	gray Y green N	<	gray partial green N	N	N
63	2643		F002	351	1C	Black, oily liquid/black liquid, thick oil	Y	N	N	6	N	N	N	Y	<	N	N	N
64	2557		D001	461	1B	Brown, milky liquid/oil	Y	N	N	7	N	N	N	N	<	N	N	N
65	2236		F002	351	1C	Oil? on top of solids/oil	Y	N	N	7	N	N	N	N	<	N	N	N
66	2173		D001	461	1C1	White, pastey solid/white crystals, glass rods	Y	N	N	7	N	N	N	N	>	N	N	N
67	2596	650	F002	351	1C	Gray, granular solid/wet dirt	Y	N	N	7	N	N	N	N	>	N	N	N
68	2209		F002	351	1C	Clear plastic sheeting/dirty plastic sheeting, some oil sludge	Y	N	N	7	Y	N	N	N	<	N	N	N
69	1729	300+	D001	461	1C1	Black semi-viscous liquid, oil-like	Y	N	N	7	N	N	N	Y	<	N	Y	N
70	999	10	F002	351	1C5	Black solid crystals, looks like small pieces of charcoal (O'Meara says carbon filter material)	Y	N	N	7	N	N	N	partial	>	partial	Y	N
71	2232	800	F002	351	1C	Top: dark brown oil layer; bottom: light brown water	Y	N	N	7	N	N	N	N	oil <	N	Y	N
72	R-1792	700	D001	461	1C1	Brown/orange liquid with white flakes	Y	N	N	7	N	N	N	Y	<	N	N	N
73	1016	>1,000	F002	351	1C5	Black tar	N	N	N	7	N	N	N	N	>	N	N	N

Omega Drum Overpacking Data																		
IT Drum Number	Ω Drum Number	OVA Reading (ppm)	Ω Hazardous Waste Label Codes			Field-Observed/IT Hazcat-Observed Description of Drum Contents	Hazard Categorization Results											
			EPA	CA	Ω*		Flash Point	Air Reactive	Water Reactive	pH	Oxidizer	Cyanide	Sulfide	Hexane Solubility	Density (in Water)	Water Solubility	Halogens	Peroxides
"East Bin"						Brown, yellow, white solids and glass	Y	N	N	7	N	N	N	N	>	partial	N	N
"West Bin"						White/brown crystals, glass	Y	N	N	7	Y	N	N	N	>	N	Y	N
74						White solid with vermiculite	N	N	N	4	N	N	N	Y	solid >	partial	Y	N
75						Pinkish-brown solid, dry	N	N	N	1	N	N	N	N	>	partial	slight	< 0.5 ppm
76						Brown, rust-like chunks	N	N	N	7	N	N	N	partial	>	N	N	N
77						Yellow resin	Y	N	N	7	N	N	N	N	>	N	N	N
78						Black liquid	Y	N	N	6	N	N	N	Y	>	N	N	N
79						Clear yellowish liquid with little solids	N	N	N	7	N	N	N	N	>	Y	Y	N
80						Thick black very viscous sticky liquid	Y	N	N	7	N	N	N	Y	>	N	N	N
81						Brown solids mixed with vermiculite	N	N	N	7	N	N	N	partial	>	N	slight	0.5 ppm
82						Reddish brown liquid with sandy solids	Y	N	N	8	slight	N	N	N	>	Y	Y	N
83						Brownish-yellow liquid	N	N	N	5	N	N	N	N	>	Y	Y	N
84	R1518	>1,000	F002	351	"PS"	Moist sandy soil	N	N	N	4	N	N	N	N	>	N	Y	N
85	2007	20	—	135	1A	Oily brown liquid	Y	N	N	2	N	N	N	N	<	N	Y	N
86	1772	10	D001	461	1C1	Crushed 5-gallon metal containers (rusty); flakes of oxidized material	N	N	N	7	N	N	N	N	>	N	N	N

* - 1A, 1B: Paint waste (pourable)
- 1C: Paste
- 1C1: Paint waste, heavy slurry
- 1C2, 1C3: Paint waste, solids, chunks
- 1C4: Paint waste solids, very hard
- 1C5: Absorbents
- 1D: Lids, socks
- 1E: Solids (paint cans, aerosol cans, dirt)
- 1F: Urethane

10

ATTACHMENT B

PHOTODOCUMENTATION

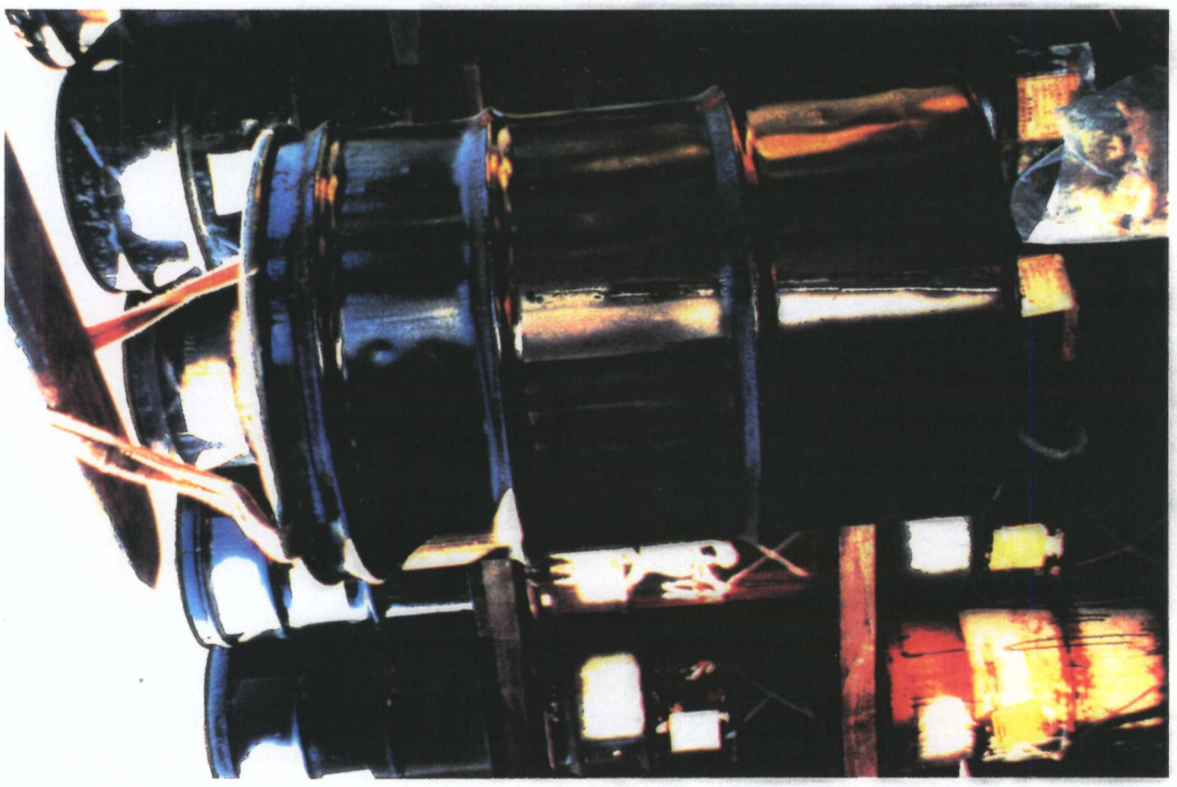
TDD: T099502-006

PAN: ECA1940MAA

Staging overpacked drums on pallets.

February 6, 1995

Photographed by: M. Schwennesen



Example of leaking drum in otherwise good condition.

June 12, 1995

Photographed by: M. Schwennesen

Omega Chemical Corporation

TDD: T099502-006

PAN: ECA1940MAA

Example of tiered drums on east side of property.

February 6, 1995

Photographed by: M. Schwennesen

IT Corporation personnel collecting hazard categorization sample.

February 9, 1995

Photographed by: M. Schwennesen

Appendix I

CERCLA Order 95-15

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

IN THE MATTER OF: Omega Chemical Corporation 12504 E. Whittier Boulevard Whittier, CA 90602 RESPONDENTS: Listed in Appendices A & B	Order No. 95-15 ADMINISTRATIVE ORDER PURSUANT TO SECTION 106 OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT OF 1980 as amended, 42 U.S.C. Section 9606(a)

PREAMBLE

This Administrative Order (Order) is issued on this date to the Respondents, pursuant to the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Section 9606(a), as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499 (CERCLA), delegated to the Administrator of the United States Environmental Protection Agency ("U.S. EPA") by Executive Order No. 12580, January 23, 1987, 52 Federal Register 2923, further delegated to the EPA Regional Administrators by U.S. EPA Delegation Nos. 14-14-A and 14-14-B, and further redelegated to the Director, Hazardous Waste Management Division by Region IX Delegations 1290.41 and 1290.42.

The State of California has been notified of the issuance of this Order as required by Section 106(a) of CERCLA, 42 U.S.C. Section 9606(a).

This Order pertains to the Omega Chemical Corporation Site property located at 12504 E. Whittier Boulevard, Whittier, California ("the Site"). This Order requires the Respondents to undertake and complete removal activities to abate an imminent and substantial endangerment to the public health and welfare or the environment that may be presented by the actual or threatened release of hazardous substances at or from the Site.

PARTIES BOUND

This Order applies to and is binding upon Respondents and Respondents' heirs, receivers, trustees, successors and assigns. Any change in ownership or corporate status of Respondents including, but not limited to, any transfer of assets or real or personal property shall not alter such Respondents responsibilities under this Order. Respondents are jointly and severally liable for carrying out all activities required by this Order. Compliance or noncompliance by one or more Respondents with any provision of this Order shall not excuse or justify noncompliance by any other Respondent. Respondents shall ensure that their contractors, subcontractors, and representatives comply with this Order. Respondents shall be responsible for any noncompliance.

FINDINGS OF FACT

Based on available information, including the Administrative Record in this matter, U.S. EPA hereby finds:

1. Site Description/Location

The Omega Chemical Corporation Site is located at 12504 E. Whittier Boulevard, Whittier, California. Omega Chemical Corporation is a spent solvent recycling and treatment facility (primarily chlorinated hydrocarbons and chlorinated fluorocarbons) which operated from 1976 until at least 1991. Omega utilized a variety of chemicals, thermal and physical treatment processes to recycle and reduce wastes. Drums and bulk loads of waste solvents and chemicals from various industrial activities were processed to produce commercial products. Waste generated from the treatment activities included still bottoms, aqueous fractions, and non-recoverable solvents.

The Site is approximately 40,000 square feet and is comprised of two buildings, a warehouse (150 by 160 feet) and an administrative building (80 by 30 feet) surrounded by a service yard. Waste management units located at the facility include drum storage areas, storage tanks, and distribution towers. The two drum storage areas contain approximately 3,000, 55-gallon drums that contain wastes and are supported on wooden pallets and stacked in rows three drums high. There are five, 5,000 gallon above ground storage tanks, allegedly containing

residual process sludge located in the western portion of the property. The tanks sit on a concrete pad and are surrounded by low walls. In addition, partially dismantled process equipment, and numerous cylinders of various sizes and other treatment units are located throughout the Site.

The service yard appears to be paved with concrete. The drums storage areas consist of two large concrete pads. Prior to 1989, it is alleged that the storage areas were unpaved or paved with asphalt that was not impervious to hazardous waste migration. Ground beneath the tank storage area in the southwest corner of the facility was noted as having a deteriorating asphalt base during an April 1985 California Department of Health Services ("DHS") inspection for Interim Status Document Compliance. At the present, the concrete is cracked in some areas and has saw-cut joints for expansion. There are sumps located at the facility which may have served as points of collection for surface runoff. The west, east, and south boundaries of the property are enclosed with a concrete block wall approximately 2 feet high. The concrete and interior fences of the containment walls are not protected with chemical-resistant coating. The facility's fence is only 4 feet high along the northeast boundary and allows easy access to teenagers and other persons who congregate at numerous public facilities in the area.

The Site is located in the City of Whittier, a community of approximately 77,000 people. The Site comprises a mix of industrial, commercial, and residential property. The area is zoned heavy industrial M-1; however, there is a public skating rink located adjacent to the east of the Site and Kaiser Hospital to the west. Residential areas are located across the street to the south and there are three elementary schools and two high schools within a one-mile radius of the facility. There are several additional elementary schools, public parks, and Whittier College located between one and two miles from the Site.

2. Respondents

Respondent Omega Chemical Corporation is a corporation incorporated under the laws of California. Respondent Omega Chemical Corporation holds title to the property located at 12504 E. Whittier Boulevard, Whittier, California. Omega Chemical Corporation operated the Site from in or about the years from 1976 to at least 1991.

Respondent Dennis O'Omeara is an individual who resides in the State of Nevada. Mr. O'Omeara is the President of Omega Chemical Corporation and operated the Site in or about the years from 1976 to at least 1991.

Based on California Department of Toxic Substance Control's ("DTSC") computer database for hazardous waste manifests, in or about the years from 1988 to 1991, the Respondents identified in Appendix A arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment of greater than ten (10) tons of hazardous waste to the Omega Chemical Corporation Site.

3. Incident/Release Characteristics

The Omega facility operated as an off-site hazardous waste treatment and storage facility under Interim Status designation from 1976 until 1991. The facility's contractors detected releases of RCRA wastes to soil and groundwater in a 1988 study. The Omega Chemical Corporation entered into an Administrative Order on Consent, U.S. EPA Docket No. RCRA-09-91-0005 ("RCRA Order") to implement a RCRA facility investigation and interim measures which was signed by EPA on October 17, 1991. In 1991, the State of California brought a civil action against Omega Chemical Corporation and Mr. Dennis O'Meara; the President of Omega Chemical Corporation, in the Superior Court for Los Angeles County, which resulted in the Court ordering Omega to cease operations, remove all hazardous waste and close the facility.

On August 27, 1993, at the request of the DTSC, EPA Federal On-Scene Coordinator, Richard Martyn, tasked the Technical Assistance Team ("TAT") to conduct a site assessment at the Omega Site. During the assessment, TAT observed approximately 2900 drums of hazardous wastes that entirely filled all available storage space at the Site. The drums were situated on pallets, sometimes three high and stacked in rows across the Site. Many of the drums were weathered from years of outside storage; however, only a few of the drums inspected displayed any signs of gross deterioration or were leaking. The DTSC concern at this time was to oversee implementation of a drum removal action and site restoration activities. The conclusion reached from the 1993 TAT assessment was that Omega represented a significant waste management problem, however the State was working with the owner/operator, and the Site should remain State lead. Since that 1993 assessment, the DTSC and EPA's RCRA program have been actively pursuing the owner/operator to perform a cleanup of the property. The State of California brought a contempt action against Omega Chemical Corporation and Mr. O'Meara, and in January 1995, the Superior Court found Mr. O'Meara and Omega in contempt of its orders and ordered that Mr. O'Meara and Omega cease all operations at the Site and cooperate fully in all efforts to investigate and implement appropriate action at the site. The State brought a criminal action against Mr. O'Meara, and at the end of March 1995, Mr. O'Meara plead guilty to two felony counts of illegal storage and disposal.

In January 1995, DTSC again requested that EPA provide assistance in reevaluating conditions at the Site. Another preliminary assessment was conducted on January 19, 1995, and the following conditions were observed at the facility: 1) over 3,000 drums were observed stacked three high, some without pallets between them; 2) a large majority of the drums appeared to be extremely corroded; 3) numerous drums were observed leaking onto other drums and onto the concrete pad; and 4) numerous spills were observed leading away from the drums to other parts of the property.

At a meeting held by the DTSC on February 1, 1995, written notice of Federal Interest was issued to the owner and operator and to a group of companies that sent waste to the site. Since that meeting the owner/operator hired an environmental contractor, overpacked 83 leaking 55-gallon drums and submitted a workplan for the removal of the containers to the State and EPA for comment. The State and EPA found the plan to be deficient and sent comments to the owner/operator. On March 27, 1995, the attorney representing the owner/operator indicated that the owner/operator did not have the financial ability to implement the work in compliance with EPA comments within the time frame required by EPA's letter.

4. Quantities and Types of Substances Present

There are currently approximately 3,000 55-gallon drums stored at the Site which contain hazardous waste. During the overpacking conducted by Omega's contractor, IT Corporation, the drums were initially hazcategorized to better document their contents. Hazcatting revealed halogenated compounds and hazardous waste characteristic of ignitability and corrosivity in the drums. There is a comprehensive description of the potential hazardous wastes handled at the Omega facility in the Administrative Order on Consent (Docket No. RCRA 09-91-005) which was signed by Omega Chemical. In its original RCRA Part A permit application dated October 7, 1980, its revised RCRA Part A application dated October 8, 1987 and its revised Notification of Hazardous Waste activity dated September 24, 1990, Respondent identified itself as handling the following hazardous wastes at the Facility:

> Hazardous wastes exhibiting the characteristics of ignitability, corrosivity, reactivity, or toxicity identified at 40 CFR 261.261.24: D001 through D029, D035, D037, D038, D039, D040, and D043.
>
> Hazardous waste from non-specific sources identified at 40 CFR 261.31 and having the following EPA Hazardous Waste Numbers: F001, F002, F003, F004, F005, F007, F008, F008, F010, F011, F020, F022, F027, and F028

Hazardous waste from specific sources identified at 40 CFR 261.32 and having the following RCRA Hazardous Waste Numbers: K001 through K043, K048 through K052, K062, K083 through K086, K094 through K098, K101, K103, K104 and K105.

Discarded commercial chemical products, manufacturing chemical intermediates, off-specification commercial products, or manufacturing chemical intermediates having the following EPA Hazardous Waste Numbers: P001 through P122 (all P-series wastes). except 123? (Toxaphene)

Discarded commercial chemical products, manufacturing chemical intermediates, off-specification commercial products, or manufacturing chemical intermediates having the following EPA Hazardous Waste Numbers: U001 through U249 (all U-series wastes). except? U359 U328 U353

Hazardous waste process units that have been identified at the Site, include the following items:

- 600 gallon storage tank (unknown contents)
- 20 gallons per hour incinerator
- 2,000 gallons per day pH modification chemical treatment unit
- 2,000 gallons per day organic compounds reaction chemical treatment unit
- 0.5 ton per hour thermal treatment unit
- 20,000 gallons per day low temperature oxidation chemical treatment unit
- 2,000 gallons per day dewatering/drying physical treatment unit
- 2,000 gallons per day distillation physical treatment unit
- 3,000 gallons per day evaporation physical treatment unit
- 2,000 gallons per day solidification/stabilization physical treatment unit
- 200,000 gallon storage tank

5. Threats to the Public Health, Welfare, and Environment

There is the potential for a spill or fire involving halogenated solvents that could cause the release of poisonous gases or cause groundwater pollution. There are fire/explosion hazards associated with over a dozen unmarked/unknown compressed gas cylinders, treatment tanks, thermal destruction units and chemical reaction vessels, bulging drums, liquid and crystalline solids, improper storage of hazardous substances, and potential soil and groundwater contamination. There is the potential for human endangerment due to inadequate site security if the Site walls or fences are breached.

Leaks and spills of various wastes have occurred at the Omega facility resulting in documented contamination of the soil and groundwater. Existing data from Omega's contractor (ENSR, Report on Site Assessment Investigations at the Omega facility, October 1988) indicate that groundwater contaminant concentrations exceed removal action levels for drinking water for methylene chloride, 1,1- dichloroethylene, 1,1,1-trichloroethane, trichloroethylene, and tetrachloroethylene. This report identifies significant concentrations of chlorinated hydrocarbons in all the soil samples and the concentrations appeared to increase with depth. As identified in the report, the subsurface investigation and analytical results from the soil and groundwater samples suggest that the soil and groundwater contamination are directly related.

Methylene chloride is a suspected human carcinogen (American Conference of Governmental Industrial Hygienists 1988-1990).

Tetrachloroethylene ("PCE") is a classified as a human carcinogen. The Maximum Contaminant level (MCL) for drinking water is 5 micrograms per liter. Up to 1030 micrograms per liter of PCE was found in groundwater beneath the Site.

Trichloroethylene ("TCE") is classified as a probable human carcinogen. The MCL for TCE is 5 micrograms per liter. Up to 258 micrograms per liter of TCE was detected in groundwater beneath the Site.

1,1-Dichloroethylene ("DCE") is classified as a possible human carcinogen. The MCL for DCE is 6 micrograms per liter. Up to 1080 micrograms per liter of DCE was detected in groundwater beneath the Site.

Chloroform is a suspected human carcinogen. Up to 24 micrograms per liter were found in groundwater below the site.

1,1,1-Trichloroethane ("Methyl chloroform") is classified as a probable human carcinogen. The MCL for methyl chloroform is 200 micrograms per liter. Up to 2080 micrograms per liter were detected in groundwater beneath the Site.

CONCLUSIONS OF LAW

Based on the foregoing Findings of Fact and the Administrative Record supporting this removal action, U.S. EPA has concluded that:

6. The property on which Omega Chemical Corporation is located at 12504 E. Whittier Boulevard, Whittier, California, is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. Section 9601(9).

7. Each Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. Section 9601(21).

8. Respondent Mr. Dennis O'Meara is either a person who at the time of disposal of any hazardous substances owned or operated the Site within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. Section 107(a)(2) or who arranged for disposal of hazardous substances at the Site within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. Section 9607(a)(3).

9. Respondent Omega Chemical Corporation is the current "owner" of the Site as defined by Section 101(20) of CERCLA, 42 U.S.C. Section 9601(20) and owned or operated the Site within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. Section 107(a)(2).

10. Each Respondent identified in Appendix A arranged for disposal or treatment, or arranged for transport for disposal or treatment of hazardous substances at the Omega Chemical Corporation facility within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. Section 9607(a)(3).

11. Each Respondent is therefore a liable person under Section 107(a) of CERCLA, 42 U.S.C. Section 9607.

12. Methylene chloride, Tetrachloroethylene ("PCE"), Trichloroethylene ("TCE"), 1,1-Dichloroethylene ("DCE"), 1,1,1-Trichloroethane ("Methyl chloroform"), characteristic hazardous waste are hazardous substances as defined by Section 101(14) of CERCLA, 42 U.S.C. Section 9601(14), and Section 302.4 of the National Contingency Plan (NCP), 40 CFR Part 300.

13. The presence of hazardous waste in deteriorating drums and the presence of Methylene chloride, Tetrachloroethylene ("PCE"), Trichloroethylene ("TCE"), 1,1-Dichloroethylene ("DCE"), and 1,1,1-Trichloroethane ("Methyl chloroform") in the soil and

groundwater constitutes an actual or threatened "release" as that term is defined in Section 101(22) of CERCLA, 42 U.S.C. Section 9601(22).

DETERMINATIONS

Based on the above Findings of Fact and Conclusions of Law, the Director, Hazardous Waste Management Division, EPA Region IX, has made the following determinations:

14. The actual or threatened release of hazardous substances from the Facility may present an imminent and substantial endangerment to the public health, welfare, or the environment.

15. The actions required by this Order, if properly performed, are consistent with the National Contingency Plan ("NCP"), 40 CFR Part 300 and CERCLA; and are appropriate to protect the public health, welfare, or the environment.

16. The conditions present at the Site constitute a threat to public health, welfare, or the environment based upon consideration of the factors set forth in the NCP at 40 CFR Section 300.415(b). These factors include, but are not limited to, the following:

a. Actual or potential exposure to hazardous substances by nearby populations, animals, or food chain

A serious threat is the potential for an uncontrolled reaction between highly incompatible and acutely toxic chemicals. Large quantities of waste chlorinated solvents in deteriorating drums along with numerous other hazardous wastes at the Site lie in close proximity to each other. There is a significant risk of failure of the drums, which would cause a subsequent release. A fire involving the chlorinated solvents could cause a poisonous gas release that would be a major public health threat to the surrounding populated area.

b. Weather conditions that may cause hazardous substances to migrate or be released

The weather conditions at the Site have greatly affected the integrity of the drums and other containers. Many of the drums have either failed or are about to fail based on the severe corroding occurring. As the material is released from their containers, wind and rain have spread these materials onto other containers and across the Site where they could be discharged into the surrounding streets, adjacent storm sewers, and eventually into the local creeks and streams.

c. Actual or potential contamination of drinking water supplies

Soil and groundwater samples taken by Omega's contractor in 1988 reveal the presence of hazardous contaminants in concentrations that exceed established health-based criteria. The subsurface investigation and analytical results from the soil and groundwater samples suggest that the soil and groundwater contamination are directly related. Deeper aquifers in the vicinity are used for drinking water. The upper and lower aquifers may be hydraulically connected. The city of Santa Fe Springs operates three wells within three miles of the Site.

d. The unavailability of other appropriate Federal or State response mechanisms to respond to the release

The California Department of Toxic Substances has formally transferred this Site to the United States Environmental Protection Agency. The State does not possess the necessary resources to conduct site stabilization and further removal activities at this time.

e. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers that may pose a threat of release

There are over 3,000 drums, numerous tanks, compressed gas cylinders and hazardous waste treatment units currently located at the Site. These containers have been stored at the Omega for many years and are in very poor condition. Over 80 drums were discovered leaking and required overpacking during February ~~and March~~ of 1995, and there are many highly corroded drums where failure is imminent. An unabated release of these materials into the environment may pose a significant threat to the local community.

f. High levels of hazardous substances or pollutants or contaminants in soils at or near the surface, that may migrate

Soil contamination has been detected directly below the drum storage area and it is suspected that this is related to the contamination of the groundwater.

g. Threat of fire and explosion

The materials present on the Site are highly flammable and given the deteriorated condition of the containers, the lack of adequate security and the dense population of surrounding area, there is a significant threat of fire and explosion.

ORDER

Based upon the foregoing Findings, Conclusions, and Determinations, and pursuant to Section 106(a) of CERCLA, 42 U.S.C. Section 9606(a), it is hereby Ordered that the Respondents undertake the following actions under the direction of EPA's On-Scene Coordinator.

17. Respondents shall notify EPA in writing by June 1, 1995 stating their irrevocable intent to comply with this Order, except for the activities set forth in paragraphs 21(h-i). Respondents shall notify EPA in writing by September 1, 1995 stating their irrevocable intent to comply with the removal activities set forth in paragraphs 21(h-i) ("Phase II Work") of this Order. In the event any Respondent fails to provide such notice, that Respondent shall be deemed not to have complied with the terms of this Order.

18. Within seven (7) calendar days after the effective date of this Order, the Respondents shall submit to U.S. EPA for approval, a Phase I Work Plan for the removal activities set forth in Paragraph 21 (a-g) below. Within three (3) months after the effective date of this Order, the Respondents shall submit to U.S. EPA for approval, a Phase II Work Plan for the removal activities set forth in Paragraph 21 (h-i). The Phase I and Phase II Work Plans shall provide a concise description of the activities to be conducted to comply with the requirements of this Order, and shall include a proposed schedule for implementing and completing the activities. The Phase I and Phase II Work Plans shall be reviewed by U.S. EPA, which may approve, disapprove, require revisions to, or modify the Work Plans. The Respondents shall implement the Phase I and Phase II Work Plans as finally approved by U.S. EPA. Once approved, the Phase I and Phase II Work Plans shall be deemed to be incorporated into and made a fully enforceable part of this Order.

19. The Phase I and Phase II Work Plans shall contain a site safety and health plan, a transportation and disposal plan, and a schedule of the work to be performed. The site safety and health plan shall be prepared in accordance with EPA's Standard Operating Safety Guide, dated November, 1984, and updated July, 1988, and with the Occupational Safety and Health Administration (OSHA) regulations applicable to Hazardous Waste Operations and Emergency Response, 29 CFR Part 120.

20. The Respondents shall retain an environmental contractor qualified to undertake and complete the requirements of this Order, and shall notify U.S. EPA of the name of such contractor within five (5) days of the receipt of this Order. U.S. EPA retains the right to disapprove of any, or all, of the contractors and/or subcontractors retained by the Respondents.

In the event U.S. EPA disapproves of a selected contractor, the Respondents shall retain a different contractor to perform the work, and such selection shall be made within two (2) business days following U.S. EPA's disapproval.

21. Within three (3) calendar days after U.S. EPA approval of the Phase I Work Plan, the Respondents shall commence implementation of the Work Plan as approved or modified by U.S. EPA. Within three (3) calendar days after U.S. EPA approval of the Phase II Work Plan, the Respondents shall commence implementation of the Phase II Work Plan as approved or modified by U.S. EPA. Failure of any Respondent to properly implement all aspects of the Phase I or Phase II Work Plan shall be deemed to be a violation of the terms of this Order. The Phase I Work Plan shall require the Respondents to perform, and complete within sixty (60) calendar days after approval, at a minimum, the removal activities identified in paragraphs (a-g). The Phase II Work Plan shall require the Respondents to perform, and complete within ninety (90) calendar days after approval, at a minimum, the activities identified in paragraphs (h-i):

a. Immediately provide security and restrict access to the Site and prevent any materials, equipment or any other item from being removed from the Site without prior EPA approval.

b. Provide security during removal operations.

c. Sample and characterize all drums, containers and hazardous materials.

d. Perform air monitoring and sampling in accordance with OSHA requirements during all phases of the removal action, especially when there is a potential for airborne releases of toxic air contaminants. Operational controls such as dust suppression will be used to abate fugitive dust emissions.

e. Remove or stockpile non-hazardous vehicles, equipment, and debris to provide adequate space for response operations.

f. Prepare all hazardous substances for proper transportation for disposal, or where feasible, alternative treatment or reuse/recycle options. The above may include bulking of compatible waste streams, direct shipment of materials appropriate for reuse, recontainerization of materials into DOT specification containers, lab packing small containers, solidification of liquid wastes, and neutralization or other on-site treatment of wastes.

g. Remove grossly contaminated equipment, structures and debris for proper disposal in compliance with state and federal regulations. Decontaminate structures pursuant to applicable state and federal regulations and laws.

h. Conduct surface and subsurface soil sampling and groundwater sampling to determine the nature and extent of contamination.

i. Dispose, stabilize or treat grossly contaminated concrete, asphalt and/or soils found at or near the surface at the direction of the OSC.

22. The Respondents shall provide EPA with written weekly summary reports. These reports should contain a summary of the previous week's activities and up-coming activities.

23. Respondents shall inform EPA at least forty-eight (48) hours prior to commencement of on-Site work.

24. All sampling and analysis shall be consistent with the "Quality Assurance/Quality Control Guidance for Removal Activities": "Sampling QA/QC Plan and Data Validation Procedures," EPA OSWER Directive 9360.4-01, dated April, 1990.

25. Any hazardous substance, pollutant, or contaminant transferred off-Site as a result of this Order must be taken to a facility acceptable under the EPA Off-Site Disposal Policy (OSWER Directive 9834.11, November 13, 1987) in accordance with CERCLA Section 121(d)(3), 42 U.S.C. §9621(d)(3).

26. With five (5) days of receipt of this Order, the Respondents shall designate a Project Coordinator. To the greatest extent possible, the Project Coordinator shall be present on site or readily available during site work. The U.S. EPA has designated Richard Martyn as its On-Scene Coordinator. The On-Scene Coordinator and the Project Coordinator shall be responsible for overseeing the implementation of this Order. To the maximum extent possible, communication between the Respondents and the U.S. EPA, and all documents, reports, and all other correspondence concerning the activities relevant to this Order, shall be directed through the On-Scene Coordinator and the Project Coordinator.

27. The U.S. EPA and the Respondents shall each have the right to change their respective designated On-Scene Coordinator or Project Coordinator. U.S. EPA shall notify the Respondents, and Respondents shall notify U.S. EPA, as early as possible before such a change is made, but in no case less then 24 hours before such a change. Notification may initially be verbal, but shall promptly be reduced to writing.

28. The U.S. EPA On-Scene Coordinator shall have the authority vested in an On-Scene Coordinator by the NCP, 40 CFR Part 300, as amended, including the authority to halt, conduct, or direct any work required by this Order, or to direct any other response action undertaken by U.S. EPA or the Respondents.

29. No extensions to the above time frames shall be granted without sufficient cause. All extensions must be requested in writing, and shall not be deemed accepted unless approved in writing, by U.S. EPA.

30. All instructions by the U.S. EPA On-Scene Coordinator or his designated alternate shall be binding upon the Respondents as long as those instructions are not clearly inconsistent with the National Contingency Plan.

31. To the extent that the Facility, or other areas where work under this Order is to be performed is owned by, or in possession of, someone other than the Respondents, the Respondents shall obtain all necessary access agreements. In the event that after using their best efforts any Respondent is unable to obtain such agreements, the Respondent shall immediately notify U.S. EPA.

32. Respondents, Omega Chemical Corporation and Dennis O'Meara, shall provide access to the Site and participate and cooperate with the Respondents for the performance of the work under this Order. The Respondents shall provide access to the Site to U.S. EPA employees, contractors, agents, and consultants at reasonable times, and shall permit such persons to be present and move freely in the area in order to conduct inspections, including taking photographs and videotapes of the Site, to do cleanup/stabilization work, to take samples, to monitor the work under this Order, and to conduct other activities which the U.S. EPA determines to be necessary.

33. Nothing contained herein shall be construed to prevent U.S. EPA from seeking legal or equitable relief to enforce the terms of this Order, or from taking other legal or equitable action as it deems appropriate and necessary, or from requiring the Respondents in the future to perform additional activities pursuant to CERCLA, 42 U.S.C. Section 9601, et seq., or any other applicable law.

34. The provisions of this Order and the directions of the On-Scene Coordinator shall be binding on the employees, agents, successors, and assigns of the Respondents.

35. The Respondents shall retain copies of all records and files relating to hazardous substances found on the site for six (6) years following completion of the activities required by

this Order and shall make them available to the U.S. EPA prior to the termination of the removal activities under this Order.

36. The Respondents shall submit a final report summarizing the actions taken to comply with this Order. The report shall contain, at a minimum: identification of the facility, a description of the locations and types of hazardous substances encountered at the facility upon the initiation of work performed under this Order, a chronology and description of the actions performed, a discussion of how all problems were resolved, a listing of quantities and types of materials removed from the facility, a discussion of removal and disposal options considered for any such materials, a listing of the ultimate destination of those materials, and a presentation of the analytical results of all sampling and analysis performed and accompanying appendices containing all relevant paperwork prepared during the action (e.g., manifests, invoices, bills, contracts, permits). The final report shall also include the total cleanup costs incurred for all removal activities and an affidavit from a person who supervised or directed the preparation of that report. The affidavit shall certify under penalty of law that based on personal knowledge and appropriate inquiries of all other persons involved in preparation of the report, the information submitted is true, accurate, and complete to the best of the affiant's knowledge and belief. The report shall be submitted within thirty (30) days of completion of the work required by this Order.

37. All notices, reports, and requests for extensions submitted under the terms of this Order shall be sent by certified mail, return receipt requested, and addressed to the following:

one copy to: Richard Martyn
On-Scene Coordinator (H-8-3)
U.S. EPA
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2288

one copy to: John Jaros
Enforcement Officer (H-8-4))
U.S. EPA
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2316

38. If any provision of this Order is deemed invalid or unenforceable, the balance of this Order shall remain in full force and effect.

REIMBURSEMENT OF COSTS

39. Respondents shall reimburse EPA, upon written demand, for all response costs incurred by the United States in overseeing Respondents' implementation of the requirements of this Order. EPA may submit to Respondents on a periodic basis a bill for all response costs incurred by the United States with respect to this Order. EPA's itemized Cost Summary, or such other summary as certified by EPA, shall serve as the basis for payment.

40. Respondents shall, within 30 days of receipt of the bill, remit a cashier's or certified check for the amount of those costs made payable to the "Hazardous Substance Superfund" to the following address:

U.S. Environmental Protection Agency
Superfund Accounting
P.O. Box 360863M
Pittsburgh, PA 15251

41. Respondents shall simultaneously transmit a copy of the check to the Deputy Director, Hazardous Waste Management Division, U.S. EPA Region 9. Payments shall be designated as Response Costs - Omega Chemical Site and shall reference the payor's name and address, the EPA Site identification number and the docket number of this Order.

42. Interest at a rate established by the Department of the Treasury pursuant to 31 U.S.C. Section 3717 and 4 CFR Section 102.13 shall begin to accrue on the unpaid balance from the day after the expiration of the 30 day period notwithstanding any dispute or an objection to any portion of the costs.

MODIFICATIONS

43. Modifications to any plan or schedule may be made in writing by the OSC or at the OSC's oral direction. If the OSC makes an oral modification, it will be memorialized in writing within 5 days; provided, however, that the effective date of the modification shall be the date of the OSC's oral direction.

44. The rest of the Order, or any other portion of the Order may only be modified in writing by signature of the Director of the Hazardous Waste Management Division. If Respondents seek permission to deviate from any approved plan or schedule, Respondents' Project Coordinator shall submit a written request to EPA for approval outlining the proposed modification and its basis.

45. No informal advice, guidance, suggestion, or comment by EPA regarding reports, plans, specifications,

schedules, or any other writing submitted by the Respondents shall relieve the Respondents of their obligations to obtain such approval as may be required by this Order, and to comply with all requirements of this Order unless it is formally modified.

ACCESS TO ADMINISTRATIVE RECORD

46. The Administrative Record supporting the selection of the response action for this site is available for review on normal business days between the hours of 9:00 a.m. and 5:00 p.m. in the Office of Regional Counsel, United States Environmental Protection Agency, Region IX, 75 Hawthorne Street, 16th Floor, San Francisco, California. If additional information becomes available, EPA will revise the Administrative Record to reflect such material. To review the Administrative Record contact Jan Carlson at (415) 744-1395. A draft Index to the Administrative Record is enclosed with the Order.

OPPORTUNITY TO CONFER

47. With respect to the actions required above, the Respondents may have a conference with EPA at 10:00 am, May 24, 1995 at the following location:

Long Beach Public Library
101 Pacific Avenue
Long Beach, California
(310) 570-7500

Respondents may appear in person or be represented by an attorney or other representative. Respondents may present any information regarding this Order. Regardless of whether a conference is held, Respondents may submit any information arguments or comments in writing to EPA within 2 business days following the conference, or within 7 business days of issuance of the Order if no conference is requested. This conference is not an evidentiary hearing, does not constitute a proceeding to challenge this Order, and does not give Respondents a right to seek review of this Order.

48. The Respondents are hereby notified that U.S. EPA will take any action which may be necessary in the determination of U.S. EPA for the protection of public health and welfare and the environment, and Respondents may be liable under Section 107(a) of CERCLA, 42 U.S.C. Section 9607(a), for all past and future costs of these government actions.

PENALTIES FOR NONCOMPLIANCE

49. The Respondents are advised pursuant to Section 106(b) of CERCLA, 42 U.S.C. Section 9606(b), that willful

violation or subsequent failure or refusal to comply with this Order, or any portion thereof, may subject each noncomplying Respondent to a civil penalty of up to $25,000 per day for each day in which such violation occurs, or such failure to comply continues. Failure to comply with this Order, or any portion thereof, without sufficient cause may also subject the Respondents to liability for punitive damages in an amount three times the amount of any cost incurred by the government as a result of the failure of the Respondents to take proper action, pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. Section 9607(c)(3).

COMPLIANCE WITH OTHER LAWS

50. The Respondents shall comply with all applicable federal, state, and local laws and regulations in carrying out the terms of this Order. As indicated above, all hazardous substances removed from the Site must be handled in accordance with the Resource Conservation and Recovery Act of 1976, 42 U.S.C. Section 6921, et seq., the regulations promulgated under that Act, and Section 121(d)(3) of CERCLA, 42 U.S.C. Section 9621(d)(3).

ENDANGERMENT DURING IMPLEMENTATION

51. The Director, Hazardous Waste Management Division, EPA Region IX, may determine that acts or circumstances (whether related to or unrelated to this Order) may endanger human health, welfare, or the environment, and as a result of this determination, may order the Respondents to stop further implementation of this Order until the endangerment is abated.

GOVERNMENT NOT LIABLE

52. The United States Government and its employees and other representatives shall not be liable for any injuries or damages to persons or property resulting from the acts or omissions of the Respondents, their employees, contractors, or other representatives caused by carrying out this Order. The United States Government is not a party to any contract with the Respondents.

EFFECTIVE DATE

53. The effective date of this Order is June 1, 1995 unless modified in writing by EPA.

THIS ORDER IS ISSUED on this 9th day of May, 1995.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

By: Keith Takata

~~Jeff~~ Zelikson, Director
Hazardous Waste Management Division
United States Environmental Protection Agency
Region IX